Administrative Science Quarterly

Dedicated to advancing basic understanding of administrative processes through empirical investigation and theoretical analysis.

JUNE 1956

Notes on a General Theory of Administration
Edward H. Litchfield

Contributions to Administration by Alfred P. Sloan, Jr., and GM
Ernest Dale

Sociological Approach to the Theory of Organizations—I
Talcott Parsons

A Problem in Soviet Business Administration
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James D. Thompson

Book Reviews * Abstracts

PUBLISHED BY THE GRADUATE SCHOOL OF BUSINESS AND PUBLIC ADMINISTRATION

CORNELL UNIVERSITY, ITHACA, NEW YORK

Administrative Science *Quarterly*

PUBLISHED FOUR TIMES A YEAR BY THE GRADUATE SCHOOL OF BUSINESS AND PUBLIC ADMINISTRATION, CORNELL UNIVERSITY, AT ITHACA, NEW YORK.

VOLUME I, NUMBER I, JUNE 1956

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Subscriptions: Domestic and foreign, $7.50 a year; single copies, $2.00; student rate, $4.00 a year. Make checks payable to Administrative Science Quarterly.

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Editorial Standards

As a multidisciplinary journal, *Administrative Science Quarterly* encourages presentation of concepts and methods from all relevant fields, without dilution. Authors should not avoid discussion of useful technical ideas, but such ideas should be explained in terms understandable to those in other academic or professional fields. Technical elaboration which would not be important to all students of administrative science but which is significant for readers from a particular discipline may be developed in an appendix. The implications of research for the understanding of administrative processes should be clearly drawn.

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Editorial

SCIENCE has been compared to pursuit of the horizon; each step forward reveals more to be taken. Perhaps no science can be said to "arrive," but many can demonstrate unmistakable progress. Success in science is more easily measured in hindsight—in terms of movement away from ignorance—than by present measurement against a known future objective.

When we look back, in 1966, it may be obvious that administration was at a prescience stage in 1956. Yet if the name of this journal proves to have been premature, it was not lightly chosen. It expresses a belief in the possibility of developing an administrative science and a conviction that progress is being made and will continue.

The first and last articles define more than the physical boundaries of this issue. Litchfield's essay outlines the scope of present editorial policy of *Administrative Science Quarterly* by suggesting the wide range of variables which must be considered. Full understanding of administrative processes, we believe, must allow for variations in the several "dimensions"—the individual, the organizational, and the ecological. While it seems clear that this is so, the various possible combinations of these factors as they condition and shape administrative processes are imperfectly understood.

The final article, by the editor, sets forth methodological objectives. Understanding of those complex dimensions and their relationships will require both testable theory and theory-testing research. It is hoped that the contents of *Administrative Science Quarterly* will reveal increasing interplay between the two.

Cornell's conception of administration, as set forth by Litchfield, places special emphasis on "reappraisal" as a mechanism for adjustment in *practical operations.* In the same vein, accepted *understanding* of administrative processes must be subject to continuous reappraisal and reformulation. The *Quarterly* will therefore welcome publishable letters and manuscripts offering additional evidence or providing new interpretations.

If in ten years—or hopefully in five—we can honestly conclude that we know better than we did in 1956, the belief and the conviction upon which this journal is founded will have been upheld. It is to be hoped that Volume 1 becomes quickly out of date!

Edward H. Litchfield

Notes on a General Theory of Administration

Lack of an adequate theory of administration has hindered both the integration of knowledge developing in allied fields and the orientation of thought to a larger concept of social action. Lack of a generalized theory makes it appear that there are no universal aspects of administration, but only special types of administration. More is known about the parts of administration than about the totality. Failure to place the subject in a larger setting has led to the ignoring of variables affecting the administrative process. After stating the needs for a working theory, the author offers a number of major and minor propositions, designed to be testable.

Dr. Litchfield, dean of the Graduate School of Business and Public Administration, Cornell University, will become chancellor of the University of Pittsburgh in July 1956.

WITH the introduction of this *Quarterly* it is perhaps appropriate to review the state of our thinking about administration. In addition I hope that this essay will add several propositions which may bring us a little closer to a working theory of the nature of the administrative process. I do not believe we have such a theory today.

We would probably all agree that the years since World War II have seen an unprecedented increase in our knowledge of selected aspects of administration. There has been an acceleration of em-

pirical investigation in the corporation, the government department, the hospital, the air wing, and other institutional settings. Likewise, there has been a tremendous growth in group dynamics and human relations research. Perhaps most important, the decade has seen either the introduction, or the first major unfolding, of operations research, game theory, cybernetics, and communication theory. Statistical theory and analysis and tremendous technological development in machine operation have provided new tools and new dimensions for decision-making activities. Spurred by the postwar growth of the behavioral sciences and assisted by a growing body of learning theory, both research worker and practitioner have given considerable attention to the individual's behavior in his role as an administrator.

These are contributions of far-reaching consequence, for they have not only added factual data which help in our understanding of administration, but they have also provided a conceptual depth which is urgently needed by a technically disposed profession supported by largely institutionally oriented academic disciplines. When fully absorbed and accepted in our thinking, the new materials will greatly assist administration's effort to achieve scientific stature. But beyond the substantive value of these individual contributions lie two further considerations of import both for practicing and academic members of the administrative profession.

First, it will be noted that most of the new thought has come from the fields of mathematics, engineering, anthropology, sociology, or some one of the emerging behavioral sciences. Relatively little has been contributed by academic students of administration per se, by practicing members of the profession, or by the disciplines of economics and political science. Members of cultures in which law is the dominant discipline in administration will observe that none of the new thinking has come from the legal profession. Second, it is equally apparent that these additions to our knowledge have been concerned with selected parts of administration and not with the whole. Indeed, for the most part, their contribution to administration was incidental to another purpose. Thus, game theory enriches our view of policy formulation, knowledge of the dynamics of group relations provides new insights for the exercise of authority, and learning theory offers new perspec-

tive for decision making, but none of these is concerned with the larger problem of the total administrative process.

The last decade saw another development of parallel significance for the field of administration. As other disciplines were illuminating selected portions of the administrative process, Talcott Parsons and others were elaborating at least the beginnings of a comprehensive theory of social action which might provide an over-all framework within which to develop a more specific theory of administration.[1] If Parsonian thought has not entirely satisfied administration's specialized needs, it must at least provoke us into the construction of a more acceptable framework.

Thus, it seems to me that we find ourselves at a critical juncture in our development. Associated disciplines are helping us to learn a great deal about portions of the subject of administration, while others are adumbrating concepts of the totality of action of which administration is a part. Flanked thus by singularly seminal movements, the question becomes, "What have we been doing to further our understanding of administration as a whole?" For, until we know the process and its setting, we can neither effectively integrate new materials others give us nor orient our process in a larger concept of social action.

The answer to this question is not particularly encouraging. During the decade, public administration, after a half-century's diversion by Frank J. Goodnow, has readmitted policy formulation to its concept of administrative functions. This is helpful even if in their zeal some may have swung into the position of that school of academic business administration which is unable to discern anything but policy in administration. Business administration has made a considerable effort to digest such new knowledges as grew from operations research, from statistical theory in decision making, and from the several other subjects already discussed. Hospital administrators are coming to understand that administration in the context of the hospital is neither exclusively housekeeping on the one hand nor deciding substantive medical issues on the other. Military administration probably has been the most self-conscious and thorough in re-examining both its theory and practice. To its

[1]Talcott Parsons and Edward A. Shils, eds., *Toward a General Theory of Action* (Cambridge, Mass., 1951).

self-appraisal we owe a large part of the more fundamental work whose results have now begun to spill over into other applied fields. If much of theoretical or methodological importance has occurred in educational administration, it has escaped our attention.

These have been significant developments. I do not minimize them. On the other hand, they have not told us much about the whole administrative process, its essential characteristics, its relationship to its environment, the way in which it becomes behavior, or its function in modern society. They are of a lesser order of magnitude than either the generic thought of Parsons or the more specific insights which others have given us of selected aspects of administration. Throughout the decade Herbert Simon's work was the only constant exception to this general disregard of the whole process and its behavioral implications.[2] Despite his real contributions, and occasional important additions from Alexander Leighton and others outside the profession of administration, we closed the ten-year period with little more by way of a comprehensive theory of administration than we had been given by Chester Barnard almost twenty years before.

CRITICISM OF EXISTING THOUGHT AND THEORY

If we are lacking in comprehensive theory, we do at least have some thought which we may examine. It is scattered from field to field, seldom internally consistent and often unarticulated. Viewed in aggregate, it has a number of inadequacies which hamper the growth of administration as a science. Let us begin with the simplest and most generally recognized. Our confusion of terminology makes it difficult to speak accurately to one another within any one field, let alone across fields and across cultures. Administration has an elevated meaning in some societies and a clerical connotation in others. "Management" and "administration" are thought of as interchangeable in much of the business world in this country but as quite distinct in much of public

[2]Herbert A. Simon, *Administrative Behavior* (New York, 1947). Other articles by Simon include: Staff and Management Controls, *Annals of the American Academy of Political and Social Sciences*, vol. 292 (March 1954), and A Comparison of Organization Theories, *Review of Economic Studies*, vol. 20 (1), no. 51 (1952–1953).

administration and in the military services.[3] Constitutional lawyers have distinguished between "administration" and "execution." "Decision making" and "policy formulation" may be used by one as synonymous and by another as discrete subjects. "Coordination" may either include, or specifically exclude, "control," and it may be either a process or a state of being. "Organization" is now a pattern for the distribution of authority, and again it becomes a total set of behavioral and value relationships. The consequence is that we are unable to speak precisely excepting in our own immediate circles where we have developed ephemeral professional dialects.

The second and, from my point of view, the most serious indictment which must be made of present thought is that it has failed to achieve a level of generalization enabling it to systematize and explain administrative phenomena which occur in related fields. Indeed, so far are we from broad generalizations about administration that we appear to maintain that there is not a generic administrative process but only a series of isolated types of administration. We seem to be saying that there is business administration and hospital administration and public administration; that there is military administration, hotel administration, and school administration. But there is no administration. We buttress this conclusion and make a general theory more difficult of attainment by developing separate schools in these fields in our universities. We organize ourselves into separate professional societies, and we have developed separate bodies of literature which speak to one another infrequently.

Let us examine this splintering in the context of a specific situation. The reader is visited by a medical friend who has just accepted his first administrative post as superintendent of a large hospital. His board is composed in part of businessmen who "want the institution run on a businesslike basis." Being municipally owned, the hospital must function in accordance with civil service regulations, central budget controls, and a variety of other public

[3]During the thirties the term "administrative management" was introduced. It meant everything and nothing. After years of usage in public administration it found its way into business and educational organizations by way of consulting firms working in all of these fields.

administration concepts and practices. The new superintendent is soon deluged with invitations to become a member of several specialized hospital administration societies and is urged to subscribe to specialized hospital administration literature. Hearing reference to "good management" and "sound administrative practice" on all sides, he turns to the reader, who is an administration expert, and asks for some reading material which will help him to understand what his severally oriented colleagues are talking about. What shall the reader tell him—that there is no such thing as administration, there is only business administration and public administration and hospital administration? Almost certainly each of us would support the view that the three had much in common and that he would find that eventually he could deal with all three in many of the same terms. But what shall we suggest that he read which will clearly describe this common ground in administration? Where will he find a statement of the content and the character of the administrative process? We will almost certainly be forced to give him materials in all three fields, along with some of the technical writings in specialized management fields such as finance and personnel, and then expect him to do his own synthesizing. If he is not satisfied, we will introduce him to Barnard, and if he still feels we haven't given him sufficient guidance, we will conclude with our ultimate bromide, "There is much of this that a man just has to learn for himself."

Actually our practice is years ahead of our thought. There is abundant evidence to demonstrate our unexpressed conviction that there is much that is common in administration. Here are a few illustrations of the point. The emerging concepts of human relations, communications, or operations research are as applicable to a hospital as they are to a bank. The constant movement of executive personnel from business to government, from the military forces into large business, from both government and business into education, is emphatic testimony supporting our conviction that knowledges and skills are transferable from field to field because of an essential universality in the administrative process itself. Again, it is a commonplace to observe that management consulting firms find their knowledges and skills applicable in the department store, on the one hand, and in the government bureau

or the university, on the other. We are thus faced with the curious dichotomy of a practice which acknowledges common ground among applied fields of administration and of a body of thought which makes no effort to delineate areas of common interest. As theorists we have not yet established generalized concepts which keep pace with the facts of contemporary administration.

Third, if current thought fails to generalize the constants or universals in administration, it may also be criticized for its failure to accord a broad role to the variables in the administrative process. Thus, while we are prepared to insist that there are many applied types of administration, we seem to be saying that within any one field the process is relatively fixed. The often violent attack upon the "principles in administration" school of thought was a reaction against the view that in any single field administration must be regarded as a constant pattern of functions and activities. It is true that we have been influenced by social science research sufficiently to accommodate "the informal organization" and that under pressure of "good public relations" we have adapted administrative performance to some of the demands of the communities in which we find ourselves. It is also true that, in our unwillingness to seek broad generalizations about administration in all fields, we have admitted modifications in administration by insisting that the specialized situation of competition, or politics, or military necessity, and so on, made administration different in each of our fields. This admission is important in modifying our rigidity of thought in this particular connection even though we have found it stultifying in our attempts to develop conceptual generalization. In spite of all of these modifications in the type of absolutist administrative thought which reached its peak in the highly legalistic nineteenth-century public bureaucracies and in classical military management, we have not yet crossed an essential divide. That circumstances modify administrative activity we concede, but we must go further and affirm our view that administration is not only constant and universal in some respects but is also a variable in an equation of action; that one of its fundamental characteristics is its relationship to the other variables in that equation. Beyond this we must articulate those other variables so that we may understand their interrelationship. We must maintain that ultimate

understanding of the administrative process comes only with an appreciation of the place of that process in a larger system of administrative action.

Fourth, I think it not unfair to say that our present thinking has a fractured quality about it. Communication theory may be good, budgetary concepts may be entirely sound, and it may be that we have a reasonably clear concept of how policies are formulated. These and the other parts of administration have concerned us more than the whole. We often regard these parts as discrete subjects. At best we regard them as sequential. POSDCORB,[4] like much earlier and later thought, was principally deficient in that it viewed administration more as a list of activities than as an organized arrangement of interdependent parts. I am not suggesting that we should know less about the constituent elements in the process. I am insisting that in addition to knowing the parts we must understand the attributes and characteristics of administration as a totality.

Finally, many of us have felt for a long time that such theory as we do have is set forth in terms which lend themselves neither to empirical verification nor to critical theoretical analysis. We urgently need our thought set forth in straightforward propositions which we may then establish, modify, or destroy as research or more careful analysis may dictate.[5] There is little prospect that the study of administration will ever approach scientific stature unless we are able to so articulate our thought.

NEED FOR A WORKING THEORY

This is not intended as an idle exercise in criticism. There are urgent reasons for the early development of at least a working theory of administration. Three are particularly compelling.

First, it is virtually impossible to codify our existing knowledge without some conceptual framework within which to do so. Theory is important for this purpose in any field of investigation, but it is crucially significant in an applied field which must ultimately draw together knowledges now scattered through all of the social

[4]Luther Gulick and L. Urwick, eds., *Papers on the Science of Administration* (New York, 1937).

[5]Such propositions are well illustrated in Alexander H. Leighton's volume, *The Governing of Men* (Princeton, N.J., 1945).

and behavioral sciences and through the many applied areas of business, public, military, hospital, and educational administration. As a framework for the organization of materials, a working theory is equally needed by the management consultant, the teacher, the professionally conscious administrator, and the research worker.

Second, a comprehensive theory is needed as a guide to research. However tentative that theory may be, it should help to discern gaps in both existing knowledge and ongoing research and thus to further the design of other research efforts. It would also provide working hypotheses as guides to individual research efforts and as vehicles for the subsequent incorporation of research efforts into organized bodies of thought.

Finally, a tenable theory of administration could become an extremely useful guide to administrative behavior. The analytical and intellectually self-conscious practitioner will readily recognize the importance of a broad theoretical framework which he may use as a measure of his personal performance and which may provide a behavioral check list in his day-to-day undertakings. Educators who do not subscribe to the "either you are born with it or you aren't" school will also find it of primary importance in shaping curricula and in guiding potential administrators.

However urgent a general theory of administration may be, it is unlikely that it can be set forth in the near future. In the first place, there appear to be few among us whose current range of thought would meet the criticisms set forth here. Second, our knowledge is still extremely fragmentary. Thus, while we have been learning about small group dynamics, as David Truman has pointed out,[6] we still know very little about the dynamics of the large institutions in which administration comes to full bloom. We have a new understanding of the functions of choice in decision making, but we know very little about the psychological mechanisms involved in its exercise. We have given little if any systematic attention to the impact of a total culture upon administrative values, practices, and behavior. Cross-cultural data are even fewer.

[6]David B. Truman, "The Impact on Political Science of the Revolution in the Behavioral Sciences," in *Research Frontiers in Politics and Government* (Washington, D.C., 1955).

Even Kurt Lewin's "elements of construction" are difficult to evolve in the absence of definitions which have achieved even minimal acceptance.[7]

Certainly this essay does not pretend to present a general theory of administration. It will attempt to set forth a series of working hypotheses or propositions which may provide at least the beginnings of a framework for a general theory of administrative action. They will serve their purpose best if they are used as targets for future effort. That they will provoke criticism one would expect. That they may prompt more constructive thought is what I earnestly hope. They are by no means complete, they are often less specific than they should be, and they are frequently less precise than I would wish. But whatever their imperfections, I suggest the following propositions.

FIRST MAJOR PROPOSITION: *The administrative process is a cycle of action which includes the following specific activities:*

A. Decision making
B. Programming
C. Communicating
D. Controlling
E. Reappraising

This pattern of actions is found in various forms in all phases of administration. It occurs in policy areas; it is essential to personnel, finance, and other types of resources management; and it is to be found in the executive function as well. The specific activities and the cycle as a whole provide the mechanism by means of which all of the separate functions of administration are carried on. It is at once a large cycle which constitutes the administrative process as a totality and a series of small cycles which provide the means for the performance of specific functions and subfunctions and even for individual technical activities.

In an idealized form it occurs as a logical sequence in which there is a progression from the making of a decision to the interpretation of the decision in the form of specific programs, to the communication of that programmed decision, to the establishment of controls for the realization of the decision, and finally to a reappraisal of the decision as programmed, communicated, and controlled. In fact, however, the cycle often occurs in abbreviated

[7]Kurt Lewin, *Field Theory in Social Science* (New York, 1951).

form. Thus the practicalities of programming a decision may lead to immediate reappraisal, eliminating the steps of communication and control. Again, total group participation in decision making may eliminate much of communication. If individual steps are abbreviated or even eliminated, the cycle is nonetheless complete. In fact, the steps probably are there, even though in quite attenuated form.

Many such cycles are in action in the administrative process at any one time. One elaborate cycle may be proceeding at board of directors' level regarding fundamental objectives, while smaller and still sequential cycles may be going forward in finance and sales, and at the same time very immediate, specific, and perhaps abbreviated cyclical actions occur in the office or in the mind of a district sales manager concerned with a particular problem devoid of any policy, methodological, financial, or human relations significance. There is thus a series of wheels within wheels, tangent now at one point, now at another. The totality is administrative action, and the wheels are similar not in size but in the articulate and inarticulate uniformity of their components.

The grouping of these activities is made cyclical by the presence of the activity of reappraisal, for this brings the sequence back to substantially the point at which it began. Yet while it completes a full cycle the sequence does not necessarily lead again to identical action. If the original decision is precisely reaffirmed, the sequence of the five activities is no more than a revolution around a constant axis. However, if the original decision is modified in the light of evidence presented in the reappraisal, the axis may move and the circle take on a cycloidal form. With the passage of time and subsequent revolutions in the cycle, an extensive cycloidal pattern may develop.

MINOR PROPOSITION: *Decision making may be rational, deliberative, discretionary, purposive, or it may be irrational, habitual, obligatory, random, or any combination thereof. In its rational, deliberative, discretionary, and purposive form, it is performed by means of the following subactivities:*

a. Definition of the issue
b. Analysis of the existing situation

c. Calculation and delineation of alternatives
d. Deliberation
e. Choice[8]

The sequence of activity from definition of issue to choice is again idealized. It presumes rationality and the existence of discretion. It contemplates the opportunity for deliberation, the possibility of calculating alternatives, and the existence of knowledge with which to estimate the situation. It is seldom that all of these factors are in fact present. Yet only if we view the pattern in its idealized form are we able to understand the nature of the parts as they occur individually or in combination.

Definition of the issue is the isolation both of problems (in the sense that a problem is a difficulty) and also of opportunities in which no difficulty is present. Thus it has both a corrective and creative aspect. A problem may require diagnosis, whereas an opportunity may be defined by research. In any event the function of issue definition is the clarification and description of the question at hand. Efficiency in subsequent steps in the cycle is obviously dependent upon the precision with which this first activity is undertaken.

Situation analysis involves a systematic effort to present facts regarding the existing situation where they may be known and estimates regarding that situation when facts are impossible to obtain. This must include a factual statement of prevalent values when those are part of the situation and relevant to subsequent choice. Many techniques assist the administrator in the performance of this activity. They include accounting, opinion surveys, market analyses, field testing of products, operations research, intelligence reports, and countless other similar analytical tools.

Alternative calculation involves two major steps: first, a systematic isolation and description of known alternative courses of action; and, second, a statement of the consequences of the alternatives where the latter are known. Where they are unknown, they must be estimated. These estimates will often themselves take the form of alternatives. In any event, this distinctive activity is concerned with known facts, assumed facts, and factual statement of

[8]For a parallel analysis, see Peter Drucker, *The Practice of Management* (New York, 1954), ch. xxviii.

values. Here we are assisted by such methods and techniques as economic forecasting, market projections, linear programming, and game theory.[9]

Deliberation is the next step. In it one is concerned with reviewing the issue in the light of what is known in the existing situation and with regard to the alternative courses of action which appear to be available. It involves an assessment of values, an appraisal of probabilities where chance alone is involved, and strategy where knowledge is imperfect. Deliberation approaches rationality as the values become explicit, as probabilities are analyzed, and as risk calculation can be reduced to a mathematical operation.

Having defined the issues, assembled and stated the facts regarding the existing situation, calculated and delineated the alternative courses of action with their known and estimated consequences, and reviewed all in terms of an explicit statement of ordered values, one is then prepared to choose. Choice under these circumstances is influenced by several considerations: first, free will or discretion and, second, the presence of rationality. Thus, a "wise choice" is apt to be one which the administrator had the discretion to make, had the rationality to base upon the known and estimated data at hand, and had the critical faculty to appraise in terms of the relative significance of those data.

In making choices, the administrator must understand that there is not always one right answer. Truth is frequently plural, and therefore the objective in the exercise of choice is rationality and not a pursuit of a nonexistent absolute. Failure to recognize both the plurality and relativity of correctness in decision making may lead to a time-losing indecision and a precarious mental health for those who must choose.

Actually few decisions are made by means of this full sequence of actions. The issue may be so patent as to make definition unnecessary. Often little effort is made to ascertain or estimate facts.

[9]For game theory, see J. von Neumann and Oskar Morgenstern, *Theory of Games and Economic Behavior* (Princeton, N.J., 1944); Martin Shubik, *Readings in Game Theory and Political Theory* (Garden City, N.Y., 1954); J. D. Williams, *The Compleat Strategyst* (New York, 1954); and J. C. C. McKinsey, *Introduction to the Theory of Games* (New York, 1952). Linear programming is well set out in A. Charnes, W. W. Cooper, and A. Henderson, *An Introduction to Linear Programming* (New York, 1953).

Built-in biases frequently result in only the most superficial calculation of alternatives, and deliberation may be short-circuited by unspecified values or an unwillingness or inability to think in strategic terms. The elimination of certain of the steps may mean poor decisions, or again it may mean that specialized circumstances make one or more steps self-evident or unnecessary.

We must also recognize the extent to which decision making is influenced by limitations upon rationality. Simon has developed this at some length.[10] The administrator must not only allow for his own irrationality, he must also calculate the actions of others as being both rational and irrational. Thus, our decisions may be partly rational and partly irrational. To the extent that they are rational they must anticipate opponents' decisions which are also both irrational as well as rational. The character of calculated irrationality may be analyzed both by probability theory and by strategic calculation.

We may say much the same thing about the purposive-involuntary variable in decision making. Again, discretion in the selection of values and actual choice is circumscribed by community and professional standards and by prior decisions which may be part of tradition or which are passed down through the organization from higher levels. Likewise, factors of time modify deliberation and the opportunity both to analyze an existing situation fully and to calculate possible alternatives. Yet with all of its variables and modifiers, the progression from definition to choice is constant. Only the internal relationships among steps will vary.

MINOR PROPOSITION: *Decisions become guides to action after they have been interpreted in the form of specific programs.*

Decisions must be interpreted by specific programs which provide the direction for detailed operation. These might be called plans, were "planning" not a confused term which is sometimes used with reference to an "outline of alternatives," and in this sense is a part of decision making. Again, the term is used as synonymous with "programming" as the latter term is used here. One may therefore more accurately speak of planning alternatives (in the decision-making process) and of program planning as an

[10]Simon, *Administrative Behavior*, ch. iv.

activity designed to implement decisions. Program planning rests on a wide range of specific methods and techniques. These include capital budgets, operating budgets, manning tables, organization charts, tables of equipment, and a variety of similar means of translating a decision into specific programs for the allocation of money, manpower, authority, physical resources, and so on. The completeness of the program is a determining consideration in the effectiveness of the original decision.

MINOR PROPOSITION: *The effectiveness of a programmed decision will vary with the extent to which it is communicated to those of whom action is required.*

Communication follows the programming of decisions in cases in which those who must act have not participated in the original decision. Communication is a method by which an individual or group transmits stimuli which modify the behavior of another individual or group. While it is an activity employed in administration, it is obviously broader than the administrative process, for there is communication among individuals who have no administrative relationship to one another. We may therefore say that we are concerned here with the use of the method of communication for the restricted purposes of the administrative process.

Carl Hovland has focused our attention upon three aspects of communication: the stimuli (which he calls "cues"), the responses to the stimuli, and finally the laws and principles relating these two classes of events.[11] This threefold focus has applicability to communication as a method of administration. Let us examine each. We already give considerable attention to the stimuli in our analyses of the role of staff meetings, policy manuals, training sessions, annual reports, house organs, and similar communication media. We are learning to pay an increasing amount of attention to responses as a result of our increasing concern with employee motivations and morale. But most important is the relation of stimuli to response. Communication as a deliberate and purposive act of administration must determine whether it seeks a response

[11]Carl Hovland, "Psychology of the Communication Process," in Wilbur Schramm, ed., *Communications in Modern Society* (Urbana, Ill., 1948), p. 59.

which sets off patterns of behavior already well established or whether it seeks a response which is basically new. At this point administrative science must look to learning theory for assistance.

Communication in administration involves three primary responsibilities. First, the administrator must establish the channels, the methods, and the opportunities for communicating with all of those above, below, and around him whose actions he would influence. Second, he must establish channels and provide the opportunity for others to communicate with him. Third, he must assure the existence of channels of communication among all those in the organization who must influence one another if the organization is to achieve its total objectives. Each of these is a deliberate action which he must take. In two instances it is his responsibility to provide structure on the one hand and to utilize it on the other.

MINOR PROPOSITION: *Action required by a programmed and communicated decision is more nearly assured if standards of performance are established and enforced.*

Standard setting and enforcement may be more generally known as "control." Communication was concerned with stimuli which would call up desired responses, and control is concerned with a definition of the desired response and the methods of assuring its occurrence. In other words, control is an action which provides norms which will serve as a guide to the actors and against which to measure their actions. Both standard setting and enforcement are carried on by means of elaborate techniques of control. They may be techniques designed to control basic programs and operations, such as a budget, an organization chart, or a functional statement. Or they may be processive tools such as job standardization, wage and salary schedules, purchasing specifications, or cost and quality controls. All play essentially the same role in the action cycle.

A notable characteristic of control action is its tendency to become an end in itself. Thus we have the familiar phenomenon of the controller who seems more concerned with his accounting mechanisms than with the management purpose which they presumably exist to further. This often results from the fact that there is an internal element of completeness within the control activity.

Having set a standard, reviewed performance in terms of the standard, and then enforced the standard, the person performing the action has, in a sense, completed a full and satisfying cycle. Standard enforcement in fact becomes standard realization and, hence, achievement. It is the only action in the cycle outside of decision making which has this organic unity about it which encourages its use as end rather than means.

While the subactions of control are standard setting and enforcement, the primary working methods are determined by the properties of the thing which is controlled. Thus control of people is achieved by means of a skillful manipulation of various types of rewards and punishments designed to appeal to the several motives of the groups and individuals concerned. Control of money comes with skillful manipulation of that resource in terms of its own laws of behavior.

MINOR PROPOSITION: *Decisions are based on facts, assumptions, and values which are subject to change. To retain their validity, decisions must therefore be reviewed and revised as rapidly as change occurs.*

A decision which has been programmed, communicated, and controlled has validity only for the limited period in which the facts, assumptions, and values upon which it was based have retained their original character. Only for such a period can the first four steps in the action cycle be regarded as static. In fact, not only are the facts, assumptions, and values in a state of constant flux, but the fact of decision in itself often brings substantial alteration in the total pattern of circumstance on the basis of which the decision was made. Hence a fully articulated decision—that is, one which has been made, programmed, communicated, and controlled—in itself brings about sufficient change to necessitate its own reconsideration. This is the activity of reappraisal.

Reappraisal is necessitated not only by change but by the possible imperfection of the original decision which time and circumstance may make apparent. New insights may be gained which improve the administrator's understanding of a more nearly correct decision, even though the facts themselves have not been altered. Here we return to a recognition of the plurality of truth

as noted in our discussion of the decision-making activity. Thus we reappraise decisions because of our acceptance of the concepts of "contingent universe" and "organic incompleteness" which are implicit in cybernetic thought.[12]

Reappraisal may be accomplished in several ways. In its simplest form it is no more than a review of the original issue in terms of new data, new assumptions, new strategies, and new values which have bearing on the decision but which arise from extraneous sources. Thus, new information about Soviet military production may require the reappraisal of a foreign policy decision which had been based upon different fact assumptions. This may be referred to as a "feed-in" activity. Quite different is the process of "feed-back," which is the essence of cybernetic theory. Here we contemplate the reappraisal of an original decision upon the basis of facts and values which have been generated by and as a result of the original decision. Reappraisal therefore provides for self-generated change and growth.

Whether the reappraisal be "feed-in," "feed-back," or a combination, its function is the same. It is needed to complete the action cycle in order to make it dynamic rather than static. This is the action which induces change and growth. It must be specifically provided for in the action pattern if growth is to be accepted as both constant and necessary. Only through reappraisal can administration adjust to the constancy of evolution; otherwise the administrator is apt to pursue a concept of the permanent and absolute. This is a vehicle for incorporating into administration an understanding of stability through change rather than through an artificial staticity.

SECOND MAJOR PROPOSITION: *The administrative process functions in the areas of:*

A. Policy B. Resources C. Execution

A "policy" is a definition of those objectives which guide the actions of a whole enterprise or a significant portion thereof. It is thus distinguished from the general term "decision," which may guide actions without reference to such objectives. The "resources"

[12]See Norbert Wiener, *The Human Use of Human Beings* (Boston, Mass., 1950).

of administration are four: people, money, authority, and materials. "Execution" is a function of integration and synthesis which is intended to achieve a dynamic and total organism. All functional areas are requisite to the process. Execution divorced from policy is aimless. Similarly, the policy function tends to become remote and sterile unless associated with resources and execution.

MINOR PROPOSITION: *Action in each functional area is accomplished by means of the action cycle previously described.*

The policy function is conventionally referred to as "policy making" or "policy formulation." In fact it is far more. Policies are not only made, they are also programmed, communicated, controlled, and reappraised. It is only in this total sweep of the action cycle that the policy function has full meaning and is satisfactorily distinguished from the activity of decision making.

The action cycle is also the vehicle for the accomplishment of the resources function. In determining the need for money or people, the administrator defines his problem, estimates his situation, calculates his alternatives, makes a choice, and thus in fact makes a decision. In allocating personnel by manning tables, authority by functional statements or charts, or money by budgets, he is in fact programming his decision. Direction of personnel is communication. Organization charts and manuals, budgets and inventories, are forms of control of money, authority, and materials. The final step of reappraisal is provided for in budget analysis and revision and in a whole series of other resource function techniques.

The action cycle is repeated in the executive function. Setting the policies and resources in motion, synthesizing their conflicting values and tendencies, and integrating the resulting management are achieved by a constant series of cyclical movements from decision to reappraisal to new decision and further reappraisal. Maintaining them in dynamic equilibrium is realized in the same way.

MINOR PROPOSITION: *Each function seeks a value which when realized is its contribution to the administrative process.*

Policy seeks purposive direction for the enterprise. The resource function seeks economy both in the sense of productivity and of frugality. Execution seeks and is evaluated by the degree to which it achieves a state of dynamic coordination. These are the contri-

butions of the three functional areas. Together they constitute an organism whose direction is purposive and whose resources are productively and frugally employed.

MINOR PROPOSITION: *Each function has distinctive characteristics which govern the application of the cycle to it.*

We have observed that policies involve questions of value and fact. Values are plural and facts are contingent. As a consequence the action cycle employed in the policy function is modified. The four resources have different characteristics. People are moved by varying combinations of rewards and punishments. Money is moved by factors of scarcity. Authority has properties which influence the way in which it may be allocated and exercised. The executive function achieves synthesis and maintains a dynamic organism by observing the laws of equilibrium and decay whether they be drawn from modern group dynamics or are as remote as Henri Bergson's "law of twofold frenzy."[13] In each case, the cycle is constant, but it is performed in the context of a function which responds to its specialized properties.

MINOR PROPOSITION: *The functional areas of administration are integrally related to one another.*

We have already observed that each of the functions is requisite to the total process. It is equally true that the areas are integrally related to one another. Obviously policy is the major determinant of the character of the resource and executive functions, but it is also true that resources are important determinants of policy and that execution may be either the realization or destruction of policy. Administrative behavior must be calculated to recognize that a new policy has immediate implications for authority, finance, and personnel. One follows the other automatically. No one can be isolated from the other, for they are in fact a continuum of reciprocating parts.

THIRD MAJOR PROPOSITION: *The administrative process is carried on in the context of a larger action system, the dimensions of which are:*[14]

[13]Henri Bergson, *The Two Sources of Morality and Religion* (Garden City, N.Y., 1954).

[14]Here the term "dimension" refers to a category of variables.

A. The administrative process
B. The individual performing the administrative process
C. The total enterprise within which the individual performs the process
D. The ecology within which the individual and the enterprise function.

Each of these dimensions has both constant properties and variables. We have examined the constants of the administrative process and must now note its variables. Likewise, we must observe the way in which these dimensions are related. In fact, the process which we have examined in the abstract becomes a real thing only in the hands of the persons performing it and in the context of specific total organizations and, in particular, total environments. These three dimensions affect the administrative process by altering its variables. It in turn alters each of them in its impact upon their variables. We thus have a concept of a system containing four dimensions, each of which has a structure comprising a number of variables which interact upon one another.

Furthermore, the other dimensions have no constant impact on the administrative process. At one point the impact of the individual administrator may be decisive and at another time relatively inconsequential. Thus in a highly articulated bureaucracy, the variations among administrators will affect the way in which the process is performed to lesser extent than in a new organization which has been less rigidly structured. In other words, there are not only variables within each dimension but there is variation in the relative roles among the dimensions in this total action system.

There are significant parallels between this proposition and the broad aspects of Parsons' theory of action.[15] He postulates three systems of action—personality, social, and culture. He further maintains that these are "reciprocally interrelated" and suggests the existence of "roles" within systems. His personality system corresponds to the dimension of the individual as an administrator. His cultural system is quite similar to the concept of the total ecological setting. Our administrative process and the total enterprise

[15]Parsons and Shils, *op. cit.*

dimensions probably assume the status of "roles" in his social system. Our thinking finds further parallels in his article in this issue of the *Administrative Science Quarterly.*

MINOR PROPOSITION: *While constant in basic structure, the administrative process will vary in important aspects, depending upon the personality of the person performing it.*

The cycle of administrative action and the functions of the administrative process are constants regardless of who performs them. The manner in which the actions are taken and the functions are accomplished, however, will vary with the characteristics of the individual. These variations in manner are as important as the constancy in structure. The self-contained administrator may deliberate alone, while the new and uncertain executive may take elaborate counsel. Deliberation is present in both cases, but the methods of its exercise are importantly different. Or, in estimating the existing situation, a Wilson may collect his own facts, whereas an Eisenhower will assemble information by means of an elaborate staff organization. Different individual administrators have radically different effects upon the whole organization. Authority as a resource may be delegated to many by a generalist, or to a few by a specialist. As a consequence the authority structure will be flat in one case and pyramided in the other. The consequences of these varying ways in which two types of personalities allocate authority are far reaching, but the resource function has nevertheless been satisfied.

Bureaucracy seeks to minimize the impact of these variables among personalities through the use of standardizing practices which will offset personality differences. For example, a military staff study requires concurrence among all units in the organization which may be affected by the proposal which the staff study contains. This assures a widespread participation in decision making and thus offsets the variation between officer X, who may realize the importance of participation, and officer Y, whose tendencies are to proceed unilaterally.

MINOR PROPOSITION: *While constant in basic structure, the administrative process will vary in important respects, depending upon the character of the total enterprise within which it is performed.*

The way in which the administrative process is performed will vary with the character of the organization. One-man decision making in an academic atmosphere is less likely than in a family-owned manufacturing organization, yet there is decision making in both cases. Reappraisal may be infrequent in a conservative British textile firm but constant in a young and aggressive corporation like General Dynamics.

The administrator communicates in a different way in an organization with a well-developed, informal structure than he does in an enterprise which has a high turnover rate and which is composed of persons whose backgrounds and associations are quite diverse. Yet the communication activity is there; only the ways of its exercise and the degree of its effectiveness will change. The impersonality of social relations which increases as an organization grows in size and complexity presents problems in communication unknown in simpler organizations. Standard setting (control) is one thing in an organization without internal social cohesion and quite another in Hawthorne's Bank Wiring room.[16]

In one sense the administration profession has overemphasized the impact of the total enterprise upon the administrative process. Here I am referring to the insistence that the fields of business, government, hospital, or the military administration are all discrete subjects. Yet the true meaning of difference escapes us unless we first isolate the constant properties or universal characteristics of administration. Our point here is that the study of difference occasioned by enterprise variations is necessary, but only following a prior understanding of the constants in this process.

MINOR PROPOSITION: *While constant in basic structure, the administrative process will vary in important respects depending upon the environment in which the individual and total enterprise function.*

The administrative process will also vary with the physical, cultural, and technological environment within which it is performed. Communication is obviously influenced by a changing technology which eliminates much of the significance of distance. It is simi-

[16]F. J. Roethlisberger and William J. Dickson, *Management and the Worker* (Cambridge, Mass., 1939).

larly influenced by conversational practice resulting from social systems of rank and class. Effectiveness of the control activity may depend upon the financial and psychological resources which the community provides as alternatives to acceptance of a distasteful standard of working norms. Indonesian understanding of "the good neighbor" raises problems in limiting supervisory spans which are missing in societies where efficiency means more and neighborliness less. Controls which may be imposed and enforced in one atmosphere may be vitiated by the existence of community or professional standards or values which preclude the individual's accepting the control provided by administration. Part of the theory of the Nürnberg trials is closely related to this.

MINOR PROPOSITION: *The types of relationships existing among the three dimensions other than the administrative have an effect upon the administrative process.*

My colleague, James Thompson, has suggested that "there appear to be four major types of relationships which an enterprise may have with organized elements of environment."[17] He notes competition, bargaining, cooptation, and coalition as the primary types of relationships between the dimension of the whole enterprise and the dimension of the environment. He then points out that these relationships between two dimensions have important bearing on the decision-making activity, for they alter the way in which it is carried on and vary the number of the participants therein. Thus the relationships between two dimensions have caused variation in the third, the administrative process. It would appear probable that we may generalize beyond this and say that there are definable relationships among each of the three nonadministrative dimensions and that the variations among those relationships will have consequent bearing upon the administrative process itself.

In this major proposition we have thus been concerned with three different considerations. In the first place, we have noted the way in which variations in any one of the three dimensions directly affect the administrative process. Second, we have noted

[17] "Administrative Process Working Papers" (unpublished Cornell manuscript, Dec. 31, 1955).

the way in which variations in the total combination of the three will affect the administrative process. Finally, it has been pointed out that varying relationships between any two (other than the administrative process dimension) will have corresponding variable effects upon the process per se.

FOURTH MAJOR PROPOSITION: *Administration is the performance of the administrative process by an individual or a group in the context of an enterprise functioning in its environment.*

The administrative process is a series of interdependent steps which may be isolated and described in the abstract. Administration, on the other hand, is the performance of the process in the specific contexts of enterprise and environment. As such it is primarily behavior, though in other times and cultures it may have been thought of as largely law.

We have already observed that the parts of the action cycle are reciprocally influential, that the functions performed by the administrative process are integrally related to one another. They suggest an interdependence which is increased once the interdimensional influences have been introduced.

This complex of interrelationships probably constitutes a whole, though it is not yet clear whether this entity can be referred to as a "system" with all of the "organic" implications of that term as it is used in the life sciences.[18] There would, however, appear to be a totality in administration (not in the administrative process) which is significant.

MINOR PROPOSITION: *Administration as a totality has definable attributes. They are:*

a. *It seeks to perpetuate itself.* As a definable complex, administration has many of the characteristics of other total organizations. Like them, its first attribute is its tendency to perpetuate itself.

b. *It seeks to preserve its internal well-being.* It is sufficiently self-conscious to attempt to protect itself against disruption from within or destruction from without. It is therefore concerned

[18]See Walter B. Cannon, *The Wisdom of the Body* (New York, 1932); Joseph Needham, *Order and Life* (New Haven, Conn., 1936); and Sir Charles Sherrington, *Man on His Nature* (Garden City, N.Y., 1953).

with its own internal workings and the morale and welfare of its participants.

c. *It seeks to preserve itself vis-à-vis others.* Each individual behavior pattern composing a complete administrative process maintains a competitive relationship with other behavior patterns constituting other processes.

d. *It seeks growth.* Like all other organisms, it is aware of the fact that it cannot stand still for long but must go either forward or backward. In its dynamic phases, therefore, it normally seeks to grow. Much of the impetus for mergers, for "empire building," and for entrepreneurial effort in general is made not only on behalf of the corporation, or the bureau, or the institution, but also on behalf of a separate and identifiable administration.

MINOR PROPOSITION: *The attributes of the totality of administration have significant effects upon administrative behavior.*

These attributes of totality are really properties of organic compulsion and as such are compulsive as far as behavior is concerned. Thus, the successful administrator seeks internal cohesion among the members of the administrative group. He seeks to keep his group intact. He presses for individual identification with the total process. He stresses competition as a means of preserving his "administration's" relationship to others. In short, he performs in such a way as to attempt to perpetuate the process, maintain its internal well-being, preserve its position among competitors, and, indeed, to help it grow.

FIFTH MAJOR PROPOSITION: *Administration and the administrative process occur in substantially the same generalized form in industrial, commercial, civil, educational, military, and hospital organizations.*

The concept of the universality of administration and of the administrative process has been implicit in much which has been set forth above. It must now be made explicit as a separate proposition. This is particularly important both for the classification of existing knowledge and as a hypothesis for subsequent investigation.

The cyclical development of administrative action, beginning with decision making and moving through reappraisal, occurs in

all types of organizations. Similarly, each of them is served by administration through the accomplishment of the same basic functions in the areas of policy, resources, and execution. Again, the process is no less organic in a hospital than it is in a manufacturing establishment. Finally, the process is but a portion of a larger action system, whether that system occurs in the Department of the Interior or in General Motors. The process becomes a whole as administration when performed by an individual within an enterprise functioning in its own ecological setting.

In every case, there is a constancy in fundamental properties. The differences which exist from one field of application to another are differences which result from the factors suggested in our discussion of the four dimensions constituting action. These are the fundamental differences; the variations in institutional application are derivative. When thus analyzed, however, these more fundamental differences are seen to be but variations in the way in which a constant process is performed or accomplished. They do not argue against a basic universality.

CONCLUSION

These propositions are far from complete, are seldom as precise as they should be, and doubtlessly are but partially correct. Whatever their inadequacies, my intention has been to frame the propositions in such a way as to meet the criticisms of existing administrative thought which were made earlier in this paper. Specifically, I have sought generalizations broad enough to encompass phenomena in several applied fields. The propositions have been calculated to view the whole administrative process and the whole of administration rather than any one or less-than-whole combination of its parts. I have attempted to relate the process and administration to larger concepts of action systems. Finally, the propositions themselves have been stated in terms which it is hoped will make it possible to test them both empirically and in subsequent analysis. At best they are notes looking in the direction of broad theory.

Ernest Dale

Contributions to Administration by Alfred P. Sloan, Jr., and GM

The first part of this article describes the contrast between W. C. Durant, the innovating genius who "invented" General Motors, and Alfred P. Sloan, Jr., the organizer who made it work by introducing a series of novel administrative skills in organization, forecasting, policy-making, controls, and human relations. The second part is an evaluation of Sloan's contributions to administrative thought through his administrative ideology and methodology. He is considered to have pioneered in applying "scientific management" at the very top levels. Finally, an attempt is made to assess the extent to which Sloan's system may be deterministic beyond the period of service of himself and his associates.[1]

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TO the general public—and often to the professional writers—the great names of American business are Ford, Rockefeller, Chrysler, Westinghouse, and others who founded big corporations. There is a tendency to overlook the fact that when the "founding fathers" passed away, their works were also in danger of passing; many of them did little to insure the continued success of their

[1]The author was aided in the preparation of this paper by a grant from the Social Science Research Council. He has drawn on the reflections of and interviews with Donaldson Brown, Walter S. Carpenter, Jr., James D. Mooney, John Lee Pratt,

creations. They were geniuses, and as such they possessed a skill or an art that could not be easily explained, much less passed on to others. Apparently they had rare combinations of talent, including the ability to seize the right chances at the right time. There are very few such men in each generation.

Their immediate successors were faced with the need to devise a scientific methodology in which a general body of administrative knowledge would supplement experience and largely replace intuition. This second generation of managers, who used a systematic approach to maintain, expand, and perpetuate the corporations founded by the geniuses, were often those who made the enterprises successful over the long term. They were the "great organizers" of American business, and the real value of their contributions has seldom been acknowledged. These contributions were of both practical and theoretical significance to the knowledge of administration.

One of the best examples of a solution to the problems confronting the successors of founding geniuses is seen in the work of Alfred P. Sloan, Jr., former president and later board chairman of the General Motors Corporation.

THE FOUNDER VS. THE ORGANIZER

The founder who preceded Sloan at GM, in the years 1916–1920, was William C. Durant. By dint of his financial flair and sales promotion ability, Durant brought together a large number of enterprises. Through his uncanny sense of combination, he acquired compatible and promising automotive products. He supported Louis Chevrolet's plan for a cheaper car, Albert Champion's ideas on spark plugs. He bought out suppliers of strategic parts. He acquired other products, such as mechanical cooling equipment (Frigidaire—"the greatest thing that could be on the market"), for further diversification.

Alfred P. Sloan, Jr., and the late Pierre S. du Pont. The author alone is responsible for the selection of facts and inferences drawn.

The contributions to administrative theory and practice made by GM in the early 1920s were, to a large extent, the result of a group effort. Some of the other members of the able group responsible for the innovations are mentioned later in this paper, but greater prominence has been given to Sloan because he presented the original reorganization plan and served as the corporation's president during some of its critical years.

One of Durant's better strokes was the acquisition of the Hyatt Roller Bearing Company in 1916 for $13,500,000 and with it the services of Alfred P. Sloan, Jr. At Durant's request, Sloan became president of United Motors, a service company that provided accessories for GM. United Motors was absorbed into GM in 1918; later that year Sloan became vice-president in charge of a group of accessories divisions[2] and shortly after that a director of the corporation and a member of its executive committee.

Durant and Sloan respected each other and had in common an unbounded faith in the future of the automobile business. Their outlook and management philosophies were quite different, but perhaps because of this very fact they complemented each other in a unique way. Durant was the man who invented the idea of General Motors, but it was Sloan who made it work.

Durant carried his business information in his head. He worked by hunch, intuition, and brilliant flashes of insight. Many of his ideas were pathbreaking; often his results were outstanding; but he was prone to error because of hasty and inadequate analyses of facts. While Sloan did not disdain risk-taking and chance (in cases where the ultimate uncertainty could not be removed), he believed in the factual approach to the solution of business problems.

Durant used largely a "one-man" method of making major decisions, and he preferred executives who agreed with him. He might never forgive a man who, like Walter Chrysler, crossed him in public. Sloan, on the other hand, believed that General Motors had to be a group organization. He was one of the first to realize that the major obstacle to organizational growth is the limited capacity of management and that, as companies increase in size, problems of coordination, communication, and outside representation increase faster than the ability to cope with them. Sloan felt that one-man control was vitiated by the excessive danger of mistakes it entailed; he recognized that no human being can be infallible. He felt that each executive, including the man at the top, must realize that he needs help and that every person in a position to make a contribution, or to obstruct, should be consulted before a decision is made. Where Durant relied on personal

[2]Specifically Sloan had charge of the divisions that sold parts and accessories to outside companies as well as to GM. Another group of parts divisions sold only to GM.

loyalty and personal inspiration, Sloan tried to enlist *all* executives in a real partnership in the interests of the corporation as a whole —by utilizing their abilities to the full, by a fair policy of promotion, by offering real incentives, and by using persuasion rather than command.

Durant placed emphasis on finance and maximum sales; one of his associates recalls that he appeared to think of volume of sales as an end in itself, more important than profits. Sloan realized the necessity for balance and the wisdom of attempting to achieve optimum results for all those connected with the corporation. Where Durant went so far as to counsel certain individual investors to add to their GM holdings, Sloan gave each inquiring stockholder a professional reply. He held to the view that a director should represent the interests of all the stockholders as distinct from any segmented group.[3] (Planned stockholder relations were initiated when Sloan found one day that Durant was issuing statements to the stockholders and the public without certification by outside public accountants, a practice Durant later agreed to stop. Sloan also set an example with the detailed and professional annual reports he issued.)

Durant's qualities were highly effective in the early days of General Motors. Its growth was fostered by the flexibility and informality encouraged by his method of doing business. And the mistakes that occasionally resulted were more than compensated for by the seemingly continuous growth of automobile demand and the upward phase of the business cycle.

After some years of Durant's management, chinks began to appear in the armor of General Motors. This occurred when the difficulties of readjustments after World War I were imposed on a less than first-class management.

One of Durant's major shortcomings was his failure to understand how accounting could be used to improve performance. One of his associates, John Lee Pratt, has said:

> No one knew how much money had been appropriated. There was no control on how much money was spent. Durant's executive committee consisted of the plant managers and when one of them had a project, he would get the vote of his fellow members; if they would vote for his

[3]This was a Du Pont concept also.

project, he would vote for theirs. It was a sort of horse-trading. In addition, if they didn't get enough money, when Durant visited the plant, he would tell them to go on and spend what they needed without any record being made.[4]

A second shortcoming of Durant's later management was the lack of inventory control. As John Lee Pratt explains it: "Durant set up a 'correlation committee,' but there was practically nothing in the way of correlation." The only record of purchases might be the suppliers' invoices in the plant managers' pockets.

As the automobile business expanded rapidly (especially between 1918 and 1920), GM division managers started to hoard materials in anticipation of an even greater demand during the latter part of 1920; they made long forward commitments and incurred more and more debt. There were no statistics to show them how inventory stood in relation to demand, or how prices should behave in relation to supply and demand. Sloan recalls:

Prices were largely determined by the initiative of the different managers.... I remember one executive committee meeting at which one division manager said to another, "I see you raised your price $150 the other day." The other one said "yes," and the first one said, "I guess I'll do the same thing tomorrow."

When the inflation turned rapidly into deflation, much of the raw material could not be used. Furthermore, a part of the inventory was not appropriate for the kind of cars needed in the changing markets. There were no field reports of car sales, and production was left to the discretion of each manager. Reduction of surplus materials and write-offs from property disposals resulted in a large loss and dangerously high bank debts.

Thirdly, Durant failed to take expert advice, especially technical counsel. Engineering, general construction, and precision of most of the car lines were poor. He made major errors in investment. Some acquisitions were largely gambles, because Durant was not sure which course the industry was taking. The Elmore Manufacturing Company was purchased in 1909 for over half a million

[4]One of the contributions of Walter P. Chrysler to the Buick division was the introduction of better accounting. He borrowed Du Pont's controller and assistant controller for that purpose.

dollars because "maybe a two-cycle motor was going to be the thing for automobiles." Seven years later GM sold this company for $50,000. (Nearly thirty years later, GM applied the two-cycle principle to diesel engines and in a short time became the world's largest supplier of diesels.) Durant invested $140,000 in the Carter Car Company, because it had a patented friction drive—it proved to be a total loss. The Scripps-Booth car division bought in 1918 or 1919 was liquidated in 1923 or 1924; the Sheridan car project was also liquidated. The Sampson Tractor Company had to be sold in 1921 at a loss of $12,000,000, written off because the concept and price of the tractor were wrong. A contract was negotiated with the President of Mexico to drill oil in Mexican property covered by water. Although it was decided not to go through with the contract, Durant persuaded one of the negotiators, John Lee Pratt, to leave Du Pont and become his assistant.

Another example of Durant's haphazard methods of decision-making, as told by Sloan, was as follows: One day Sloan left his office at Forty-second Street near Times Square (his headquarters were above a bar). He was walking up Broadway when he ran into Durant, who told him of his newest idea to put up a big office building in the heart of the Detroit business district. Sloan demurred and after some prodding from Durant (who really did not like disagreements) suggested another location at West Grand Boulevard and Cass. Real estate would be less expensive; GM executives from many of the outlying plants would save a lot of time in getting to the head office. Durant was impressed and invited Sloan to inspect his proposed location. As soon as Durant saw the empty land, he rapidly measured the ground and asked Sloan to handle the financial and real estate problems involved (of which Sloan knew nothing). But once GM set up in the new location, suppliers and dollars moved in. In this way, Detroit's second most valuable real estate parcel was created!

Finally, the organization of GM was inadequate. As the late Pierre S. du Pont told it: "Durant had operated as a one-man concern. He was really the head of the company and attended to everything. The other men were subject to his direction; there was very little incentive for the men themselves to operate independently."

Durant might have as many as forty or fifty individuals who could go to him for a wide range of decisions. He had no intermediaries between himself and the managers of the large car divisions, except Sloan, who was head of the accessories divisions. Durant did bring in Walter Chrysler from Buick as general manager, but the two never agreed on the division of responsibilities since Durant would not give up direct dealings with the division managers.

Walter Chrysler has told of the difficulties he had with Durant's methods of management. For example, at one time Durant sold the Detroit Buick branch without consulting him. On another occasion Durant hired one of Chrysler's principal superintendents without telling him anything about it. As Chrysler told it:

A number of arguments on matters of that kind occurred during our three years together. I remember I went to see him once and said, "Billy, for the love of —— please, now, say what your policies are for General Motors. I'll work on them; whatever they are, I'll work to make them effective. Leave the operations alone; the building, the buying, the selling and the men—leave them alone, but say what your policies are."

Billy laughed at me. "Walt, I believe in changing the policies just as often as my office door opens and closes."

I wagged my head and said, "You and I can never get along." That's the kind of fellow he was, though; we'd fight, and then he'd want to raise my salary. [Durant was paying Chrysler $500,000.] Then I'd speak as gently as I knew how: "Billy, I'm getting all the money I want. Salary be damned! Will you please leave the Buick organization alone?"

Once I had gone to New York in obedience to a call from him [Durant]; he wished to see me about some matter. For several days in succession I waited at his office, but he was so busy he could not take the time to talk with me. It seemed to me he was trying to keep in communication with half the continent; eight or ten telephones were lined up on his desk. He was inhuman in his capacity for work. He had tremendous courage too. He might be risking everything he had, but he never faltered in his course. He was striving to make completely real his vision of a great corporation. Men, big men, came and went at his command. "Durant is buying" was a potent phrase in Wall Street then. During a lull I gained his attention for a minute. "Hadn't I better return to Flint and work? I can come back here later." "No, no. Stay right here." I waited four days before I went back to Flint; and to this

day I do not know why Billy had required my presence in New York.[5]

In 1919 I believed we were expanding too fast by far. [GM's capacity in 1918 was 223,000 cars.] During that year, the authorized capital stock was increased from $370,000,000 to $1,020,000,000. Less than a third of the common had been issued. However, all my feeling, all my complaints, had to do with the physical expansion. Besides the tractor business, the company was taking over a variety of manufacturing enterprises. The corporation was getting many of its own sources of supply, of bodies, differential gears, and many other items. We were building new factories and putting up houses for employees. They were putting up a $20,000,000 office building. They kept buying things and budgeting this and budgeting that, until it seemed to me we might come to a dismal ending. Buick was making about half the money, but the corporation was spending much faster than we could earn. So I quit—this time for keeps—saying, "Now Billy, I'm done." Alfred Sloan and one other came to see me. They tried to talk me into staying. "No, I'm washed up. I just can't stand the way the thing is being run. All I'm anxious about now is to sell my stock." Yet the automobile industry owes more to Durant than it has yet acknowledged. In some ways, he has been its greatest man.[6]

The actual end of the Durant regime came late in 1920, when the finance committee, which included Pierre S. du Pont and John J. Raskob, of Du Pont, and representatives of banking interests,[7]

[5]Durant might call a meeting of top executives at 9 A.M. so that Chrysler and others had to get up at 5 or 6 A.M. to get to Detroit in time. The men might find Durant busy on the telephone buying and selling, wait all day, and go home without even talking to him.

[6]Walter P. Chrysler, with Boyden Sparkes, *Life of an American Workman* (New York, 1950), pp. 148, 152, 161; quoted with permission of Dodd, Mead and Company, publishers.

[7]The Du Pont Company had acquired a financial interest in GM a few years earlier, and Pierre S. du Pont and Raskob became directors in 1917 at Durant's request. Du Pont and Raskob had recognized some of Durant's shortcomings and were particularly concerned that GM gain better recognition and acceptance in the banking and investing world. Mainly through Raskob's energetic influence, the following outstanding bankers and industrialists joined the board in 1919: Owen D. Young, Clarence Wooley, William H. Woodin, E. R. Stettinius, Seward Prosser, and George F. Baker. The last three made up the banking group. In the banking and industrial world of the time, the automobile industry had a questionable status. Entry of the six men just mentioned furthered acceptance of the industry, and GM in particular, by the banking fraternity and the investing public. Had this move not been accomplished, it is doubtful whether GM could have weathered the storm. In 1920 the banking group engaged the services of a nationally known engineering

were shocked to learn that Durant was in distressing financial circumstances because of his stock market operations. The day was a holiday, but it was inevitable that the next morning would bring a deluge of calls for more margin. Durant's only collateral was his large blocks of GM stock, and a forced sale of his holdings might well bring on a general collapse. GM had large loans outstanding and might be thrown into receivership.

Du Pont, Raskob, and representatives of Morgan and Company wrestled with the problem far into the night, and at 5 A.M. summoned members of the Du Pont finance committee to consider a plan developed by Raskob and Pierre du Pont. A company was formed to take over Durant's stock; and the Du Pont Company added enough stock to provide an equity position. Then the company, called Du Pont Securities Company, borrowed $20,000,000 from the banks on a one-year loan, which had been prearranged, and took over Durant's holdings.

In connection with this "life-saving" procedure, Durant was allowed 20 per cent of the stock of Du Pont Securities in return for his GM holdings. He realized on his equity holdings in 1921; they yielded him something like $6,000,000, which he said "was enough for a man 60 years old"; he and his wife, he added, were going to enjoy life. Durant could not keep out of the automobile business, however, and later he lost everything. Walter Chrysler, among others, supported him in his later years.

Naturally the Du Pont Company considered the one-year banking accommodation merely a stopgap. Before the end of the term a ten-year bond issue was placed and the obligation paid off.

When Durant left, it was feared that the entire character of General Motors might change and that the very real advantages it had acquired under his leadership be lost. To avoid this, the bankers on the GM finance committee appealed to Pierre S. du Pont (former president of Du Pont and then head of the Du Pont family) to assume the presidency. Since Du Pont had already retired from his own company and was loath to leave his home in Wilmington,

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firm to make a study of GM and recommend changes that seemed desirable. An exhaustive examination was made over a period of months, and late in 1921 the consultants came through with a report and recommendations. One recommendation was that the Sampson Tractor division be scrapped—a move determined months before—and another that the Chevrolet division be dispensed with.

Delaware, he desired a role no more active than that of close counselor. But the bankers, through their spokesman Seward Prosser, persuaded him to accept the post for a limited time.[8] He stipulated that he should be allowed to relinquish the presidency as soon as a qualified man could be found.

THE NEW GM MODEL

Long before Durant resigned, Sloan—who had always been interested in management problems and had been studying the GM organization since he joined the company—had become very much concerned with the managerial shortcomings he observed. He had almost all his funds invested in the corporation, and he did not wish to sell his stock while he was close to Durant. Moreover, he held a top position and he loved the work.

In May 1920 Sloan had prepared an elaborate report on the GM organization, embodying a plan for the systematization of management and the introduction of administrative skills. John Lee Pratt presented it to Durant for him, and later he recalled: "Durant glanced at it and said it would take some time. So far as I know, that was the end of it."

Sloan was quite discouraged, worried about the future, and upset physically. So he took off a month during the summer to go to Europe and think over his position. On returning to the States, he heard that Durant opposed lowering the price of GM cars in the then falling market. That, apparently, made Sloan decide to resign—he had received a handsome offer to act as industrial representative of the New York banking company, Lee, Higginson, and was inclined to take it. But since there was no time limit attached to the offer and Durant was unprecedentedly on vacation, he waited awhile to watch developments.

Then, in December 1920, Pierre S. du Pont presented Sloan's reorganization plan to the board of directors.[9] (It had been incorrectly assumed that since Du Pont himself came from what was then

[8]Du Pont also took over the management of the Chevrolet division until William S. Knudsen was brought in from Ford.

[9]It is impossible to describe and appraise all of Sloan's contributions to administration and organization in a single article. Some of his associates are no longer alive or no longer accessible. Hence the following is devoted to some examples drawn from the original GM organization plan, to a partial summary of its initial execu-

a centralized organization, he would not favor the decentralized pattern Sloan recommended.) Sloan's plan was accepted, largely in its original form, on December 30, 1920. Sloan was made vice-president in charge of the advisory staff, and a short time later he succeeded J. A. Haskell as operating vice-president. Of the original nine on the executive committee, four had left GM.[10]

Sloan received a high and increasing degree of responsibility. On April 25, 1922, he was appointed a member of GM's finance committee; on May 10, 1923, he was made president of General Motors; and that same month he became a member of the Du Pont board, though he was not able to attend the meetings very frequently.

Sloan's organization study—the report on which the GM reorganization was based—is a remarkable document. Almost entirely original, it would be a creditable, if not a superior, organization plan for any large corporation today. Succinctly and clearly written, with no unnecessary language, it presents his program for GM in twenty-eight pages (plus a comprehensive organization chart) that must be read and studied carefully to discover its manifold implications. It is a landmark in the history of administrative thought. Most remarkable of all, as Sloan has said, "the basic principles of management to date that I have outlined in the original study I made in the spring or early summer of 1920 still hold in General Motors today, [although] there have been changes in the shape of the organization chart [and] in nomenclature."

As happens in the systematization of a great enterprise, the reorganization was made possible by the conjuncture of a group of

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tion and implementation, and to some of its results from 1921 to 1925. An adequate history of GM during those years might require several volumes. Our emphasis is on an evaluation of some of Sloan's contributions to the body of administrative knowledge.

[10]The GM executive committee at that time was a temporary stopgap, pending evolutionary processes. Although the way was left open for any contender who displayed the necessary knowledge and ability, all concerned thought of Sloan as the natural successor to Pierre du Pont, and Du Pont himself leaned heavily on Sloan during his period in office. Sloan was chairman of a group known as the operations committee, which evaluated broad policies before they were passed on to the executive committee; Du Pont and Raskob attended when they could or whenever something of importance was under consideration. After Sloan assumed the presidency, a new executive committee was created, which functioned more fully in the usual way.

outstanding individuals who fitted together just at the right time.

Of these, Alfred P. Sloan, Jr., appears to have been the great empiricist who rose to the many challenges by providing the model, the system, the methodology, and the proper distribution of the equities among the various groups affected by GM. He was a complex personality and a tireless worker who made GM his all-embracing interest. He let time, persuasion, and an incisive appeal work for him.

Pierre S. du Pont was distinguished as a profound mind, a man who recognized the essentials and backed the great, risky decisions to the hilt. He studiously kept out of details. He stayed in the background to give more leeway to the younger men.

Donaldson Brown was probably the most brilliant of the group. He made the great contributions in the areas of basic objectives, policies, controls, and systematization of ideas. He was selfless and professional to an extraordinary degree. His associate (and later successor) in this work was Albert Bradley.

John J. Raskob was the financial genius, promoter, and risk-taker who undertook the great coups for the corporation.

John Lee Pratt was the general staff officer par excellence, who counseled and represented his chiefs on many hazardous missions.

James D. Mooney guided the corporation's foreign affairs.

It is impossible to separate the contributions of each of these individuals to administrative thought, and in the following pages the work of Sloan is intermixed with that of the men named above, unless I have indicated otherwise.

The recommendations of 1920 rested on two principles, which are stated as follows:

1. The responsibility attached to the chief executive of each operation shall in no way be limited. Each such organization headed by its chief executive shall be complete in every necessary function and enabled to exercise its full initiative and logical development. [Decentralization of operations.]
2. Certain central organization functions are absolutely essential to the logical development and proper coordination of the Corporation's activities. [Centralized staff services to advise the line on specialized phases of the work, and central measurement of results to check the exercise of delegated responsibility.]

The definite objectives Sloan hoped to attain by the plan included:

1. To definitely determine the functioning of the various divisions constituting the Corporation's activities, not only in relation to one another, but in relation to the central organization. [Clear division of work on the basis of specialization.]
2. To determine the status of the central organization and to coordinate the operation of that central organization with the Corporation as a whole, to the end that it will perform in its necessary and logical place.
3. To centralize the control of all the executive functions of the Corporation in the President as its chief executive officer.
4. To limit as far as practical the number of executives reporting directly to the President, the object being to enable the President to better guide the broad policies of the Corporation without coming in contact with problems that may safely be entrusted to executives of less importance. [Concentration of the chief executive's work on innovation and representation through delegation of operating functions down the line with coordination and planning by general advisory staffs.]

Two major segments of organization are distinguished, major control and executive control. *Major control* was viewed as a line of authority running from the stockholders to the directors to two major committees to be chosen by the latter:

(a) The *finance committee,* which would formulate financial policy for the corporation as a whole and pass on appropriations for capital investment recommended by the executive committee. A chart dated January 1921 shows that the committee included John J. Raskob, Pierre S. du Pont (then president of the company), and seven other directors, including J. A. Haskell, who with Sloan had charge of operations. Raskob was chairman.

(b) The *executive committee,* to be headed by the president and to include representatives of the operations. The same chart shows Du Pont as chairman, Raskob as financial representative, and Sloan and Haskell as vice-presidents in charge of operations.

Executive control was to rest with the president, who would act within the framework laid down by major control. Under him would be the *operations,* which were grouped on the basis of common characteristics—commercial and manufacturing with outside distribution, manufacturing only, common geographical bases.

General managers of operational units received absolute administrative control ("as great as the chief executive of an independent administrative corporation") over their own manufacturing, sales, financial, and engineering staffs, and in practice they were seldom overruled. Related operations of lesser importance were grouped together under a single head, which cut down the number of people reporting to the president and relieved him of detailed administration.

Divisions within the corporation were encouraged to compete among themselves in engineering accomplishments, styling, and service to public wants and tastes. In the transfer of products from one division to another, company policy attempted to make prices competitive with those of outside suppliers; in fact, purchases from outside suppliers were known to have been made for the purpose of keeping division management on its toes.

Coordination was provided through an *operations committee,* on which the heads of the operating divisions would be represented. A *general advisory staff* was provided to help the decentralized divisions with specialized problems: purchasing, engineering and research, insurance, legal problems, real estate, sales and advertising, and so on, but the staff was *specifically* denied authority over the line. "The advisory staff," Sloan wrote, "is practically consultant to the operations. . . . While it may develop and disseminate information and stands ready to be called upon for advice. . . operations are free to accept or reject the advice as. . . judgment may dictate, subject to the general supervision of the president."

Another central group was the *general financial and accounting staff,* under the direction of the chairman of the finance committee, who would also be a vice-president of the corporation. (In 1920 this was Raskob.) The province of this group was the finance and accounting of the corporation. Its activities were coordinated, through the president, with the financial activities of the divisions.

The president was also given a personal staff consisting of a number of "assistants to" and an *appropriations committee.* The latter was to investigate the desirability of proposed property improvements or purchases recommended by the operating divisions. It could draw on specialists in the general advisory staff for technical data and advice.

ADMINISTRATIVE SKILLS

The work on the organization structure was followed rapidly by the introduction of new administrative skills. Sloan vividly explains the reason:

> Often in thinking of 1920 and in thinking of what developments have taken place, I liken General Motors to a great big ship crossing the ocean. In the spring and summer of 1920 here was this great ship going along at full speed, just every ounce of steam that could be put into the boilers was there, and the sun was shining and people on the bridge seemed to feel no possibility of fogs, shoals or anything of the kind, but it was just going on forever. The storm came suddenly and we found ourselves in a position of inventories increasing, lack of business, shutting down our plants.
>
> Now it seemed to me that there was a much better way of doing things —we had to have a different method of operations. We would have some sort of signals so we would be able to know exactly where we are at all times and would have to have some plan of forecasting to look ahead as far as is possible. So little by little we have developed indices .... We have such control over this ship that we know exactly where we are at all times.

In the desperate situation that existed, Sloan's achievements and those of his collaborators at GM were remarkable. They saved GM from destruction, a fate suffered by so many competitors before and since. They systematized the government of the corporation, shifting it away from management by hunch and intuition. They inaugurated operational controls and mechanisms for speedy adjustments. The work that went into each administrative change was enormous. Yet results were accomplished with amazing speed.

The introduction of the following administrative skills represented merely a fraction of the work involved—and of the results accomplished.

Forecasting

The forecasting program at GM was described by Albert Bradley, assistant treasurer of the corporation in the mid-20s, as "nothing more than systematic planning applied to the conduct of the business." It grew up largely in response to the overproduction of automobiles in relation to market demand and the subsequent overstocking of dealers.

The most important purpose of the forecasting function was microeconomic: to keep production schedules in line with changes in ultimate consumer demand. To a lesser extent, it was designed to provide a means of establishing an operating program geared to provide a desirable rate of return on capital. plus income for expansion.

Dealers were induced to report on their sales every ten days so that the rate, seasonally considered, at which new and used cars were passing into the hands of users could be determined. It was also recognized that overzealous sales representatives might be forcing cars on dealers, making distress merchandising necessary to clear inventories; therefore an attempt was made to obtain data that would reflect whether individual dealers were operating at a profit. Eventually this led to the introduction of standard accounting practices throughout the dealer body.

The importance of obtaining accurate reports from dealers was demonstrated in the spring of 1924, when Sloan made his first field trip to call on dealers across the country. The first cities he visited were St. Louis and Kansas City, where he found conditions of oversupply, just as had been expected. After leaving Kansas City, he sent a telegram instructing the head of one of the divisions to cut back production schedules and stating the extent of the cutback. This was the only time, in the years of Sloan's regime, when instructions were laid down flatly, he observes.

Macroeconomic forecasts were based on an appraisal of economic growth (taking account of population, wealth, and income), business cycle trends, industry trends and competition, and seasonal variations. Some of GM's statistical data were of a pioneering character—for example, the estimates of wealth and population trends. Pathbreaking also were some of the basic calculations of return on capital, the gearing of price policies and utilization of operations to desired profitability, the careful estimates of consumer demand, and the gearing of expenses to sales to produce the desired profits. Some of the pioneering work was summarized by Donaldson Brown in a 1924 memorandum, "Pricing Policy in Relation to Financial Control." Divisional and corporate forecasts were made for three contingencies: "pessimistic," representing minimum expectations; "conservative," representing what was likely to hap-

pen; and "optimistic." Stressing that a theoretical approach was essential to successful planning, Brown postulated that "a price reduction would be desirable, if the added volume affords an increase in aggregate profit in excess of the economic cost of the additional capital required." Illustrating this thesis profusely in relation to utilization, Brown was thus a pioneer of "marginal analysis" and also in the detailed analysis of the strategic revenue and cost factors determining rate of return on capital investment.

Policy-making

Absence of policies had made for inconsistency, red tape, mistakes, and losses—the haphazard price-making was one of the more flagrant examples. Under the new system, the statistics developed by the forecasting function were used to determine the income of various consumer groups, and to develop a line of products for each income bracket. The policy was to produce "a car for every purse and purpose," "just as a general conducting a campaign wants to have an army at every point at which he is likely to be attacked."

The basic price policy of the corporation was designed to provide an optimum return on investment over a period of time; the standard price was set in line with a standard volume, and the relationship between rate of operation and capacity was fixed, although with a certain amount of flexibility.

Relationships[11]

At a time when there was little knowledge of "the human factor in industry," Sloan had already proclaimed that "no matter what the value of any business is, measured in bricks and mortar, that part is negligible compared with the value of every man in his place coordinated into an effective whole."

From the beginning he realized the tremendous importance to employees of personal contact with the chief executive and the inspiration derived from it. In order to devote at least half his time to personal contact, he passed on detailed planning and coordinating work to his staff.

He did not confine his contacts to the GM headquarters. After

[11]"Relationships" here refer solely to executives and dealers; employee and public relations are outside the scope of this paper.

the new organization was properly established, he devoted a large part of his time to dealer relationships. He probably had personal contacts with more dealers than any other executive in the industry.

Traveling at night, interviewing during the day, he talked to thousands of dealers a year—well over a hundred on any one trip. He used personal contact as a means of "short-circuiting all the great distances between ourselves, the executives who initiate a program and the dealer who is making the final contact with the customer."

Sloan's visits were unannounced. He took one half to three quarters of an hour to establish confidence. Then he would talk about the product and methods of improving and selling it. Dealer meetings were held at which bankers were invited to give financial support or reluctant men were persuaded to become dealers; newspapermen were persuaded to provide publicity.

Sloan was an extremely patient listener. Detailed notes, taken at the meetings, were analyzed at home, and the GM accounting department was enlisted to help the dealers by providing accounting systems for them, making interdealer comparisons, and helping them cut expenses. The GM sales promotion department was established to make customer surveys (a major factor in the greater acceptance of GM cars) and to improve sales efforts, advertising, and so on. But most important was Sloan's personal work of introducing the dealers to systematic methods. Watching the progress buoyed him up and sustained his faith in systemization of the business. Sloan used to say:

> If I could wave a magic wand over our dealer organization, with the result that every dealer could have a proper accounting system, could know the facts about his business and could intelligently deal with the many details incident to his business, I would be willing to pay for that accomplishment an enormous sum.... It would be the best investment GM ever made.

Sloan was able to place before each dealer bogeys showing the proper relationship of each expense item to the business as a whole, and with very profitable results to the dealers. They were so grateful that years later they collected a large donation for the Sloan-Kettering Institute for Cancer Research.

In his relationships with his executives Sloan placed stress on

their contributions to corporate objectives and professional performance, rather than on "politics" or personal loyalty. He attempted to make partners of his principal associates and to encourage their participation in policy-making.

The partnership idea was buttressed with a systematic bonus plan "designed to develop good officials." This highly ingenious plan not only served as a means of rewarding good performers but also helped top management to discover and develop them and reduced "pirating" of executives by other concerns.

A bonus plan had been inaugurated by GM in 1919, under the urging of the Du Pont representatives on the board, but during the Durant days some of the division managers had specific contracts providing for definite percentages of the profits of their divisions. The Du Pont people regarded contracts of this kind as unsound, since they placed no emphasis on contributions to the corporation as a whole. These contracts were all canceled through separation or settlement shortly after Durant left.

The plan was then modified so that individual awards from top to bottom were designed to reward individual contributions to the over-all success of the corporation.[12] Division allotments were made on the basis of return on investment considered in the light of surrounding circumstances, and individuals were rewarded on their superiors' recommendations and on the approval of higher authority.

Even this brief analysis indicates that the GM bonus plan of thirty years ago still ranks among the best designed today. Note the emphasis on divisional evaluation tied to the general organization plan and the profit objectives of the company, the attempt to set up separate "little General Motors companies" evaluated in terms of their own performance and in comparison with other divisions. Since division heads were held responsible for the performance of their units in terms of money results, they were anxious to receive the necessary authority—a prime factor in expanding decentralization. Note also that individuals were to be evaluated on a common-sense basis, with a check provided by group opinion. There is neither dependence on quantitative meas-

[12]The plan in existence at GM today is substantially the same.

urements alone nor emphasis on such largely subjective factors as "integrity," or "loyalty."

Clearly this bonus plan exhibits a great advance in rationalizing executive compensation plans. It is definite in areas where knowledge is advanced, such as accountancy; it relies on common sense in areas of speculation, such as psychology. The method, procedure, and the financial obligations of the corporation are always unmistakably clear.

RESULTS

One criterion for evaluating Sloan's reorganization of General Motors is the opinion of management generally—both within the corporation and outside it.

If imitation is the sincerest form of flattery, that opinion is high. The GM organization plan has been adopted by a considerable number of very large corporations and many medium-sized firms, as well as by government agencies. Though there have been important variations in individual cases, the essence of the programs and the basic principles are the same. Henry Ford, apparently with the GM reorganization in mind, derided it as follows:

> To my mind, there is no bend of mind more dangerous than that which is sometimes described as the "genius for organization." This usually results in the birth of a great big chart; showing, after the fashion of a family tree, how authority ramifies. The tree is heavy with nice round berries, each of which bears the name of a man or an office. Every man has a title and certain duties which are strictly limited by the circumference of his berry. It takes about six weeks for the message of a man living in a berry on the lower left-hand corner of the chart to reach the President or Chairman of the Board, and if it ever does reach one of these august officials, it has by that time gathered to itself a pound of criticisms, suggestions, and comments. Very few things are even taken under "official consideration" until long after the time when they actually ought to have been done. The buck is passed to and fro and all responsibility is dodged by individuals—following the lazy notion that two heads are better than one.
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> Now a business, in my way of thinking, is not a machine. It is a collection of people who are brought together to do work and not to write letters to one another. It is not necessary for any one department to know what any other department is doing. . . . It is not necessary to

have meetings to establish good feelings between individuals or departments. It is not necessary for people to love each other in order to work together.[13]

But when Ford's grandson found that the respective shares of market had been almost reversed and that his own company was losing heavily, he hired some of the best GM executives and installed a method of organization substantially that of General Motors.

Pierre du Pont, not given to exaggeration, stated in his first report to GM stockholders for the year 1921: "Much has been accomplished and many plans laid that will develop to the future advantage of the corporation. Systematic study has been given to the relations of the several divisions to each other, and duplication or conflict of effort has been avoided. . . . Benefits are already accruing." In his report for 1922, Du Pont felt that the results of the reorganization were such that "the recurrence of the 1920–21 disaster would seem unlikely, if not impossible." On his retirement, he summed up the two years' reorganization efforts with the opinion that "the greater part of the successful development of the corporation's operations and the building up of a strong manufacturing and sales organization is due to Mr. Sloan."

C. S. Mott, one of the largest GM shareholders, recognized Sloan as "a crystallizer of corporation policies for the benefit and protection of the customer, the stockholder and the members of the GM organization . . . an ideal man to direct the affairs of GM."

But it is not necessary to rely on opinion alone to appraise the success of the reorganization. Facts and figures tell the story.

Short-term Profits

Even while there were losses from the inevitable disturbance of change, the liquidation and scrapping of inventories, the abandonment of unsuitable car, truck, and tractor models, benefits were accruing, and they increased during subsequent years.

In the first year after Sloan became president, the corporation nearly doubled its manufacturing capacity, and it did so entirely out of its current earnings. At the same time, GM sold the largest

[13]Henry Ford (in collaboration with Samuel Crowther), *My Life and Work* (New York, 1926), pp. 91–92.

number of cars in its history, and by 1927 sales had risen almost 100 per cent—from 800,000 to 1,500,000 cars. Dollar volume of sales nearly doubled between 1923 and 1927, and a loss in 1921 was changed to a profit of $235,000,000 in 1927.[14] The bank loans had been paid off by 1922.

Production schedules, which had been one of the least efficient aspects before 1921, became more stable with the elaboration of current operating controls. By 1925 operations were at a more nearly level rate, and closer scheduling of materials made it possible to manufacture a larger quantity of cars with a smaller amount of money tied up in inventories.

The turnover of inventories was also favorably affected. For example, the turnover of total inventory rose from one turnover annually in 1920 to over six in 1925. End-of-the-month investments dropped from $160,000,000 in December 1920 to $110,000,000 in December 1925. There was an equally great improvement in the turnover of "productive inventory" (total inventory less finished product). It turned over one and a half times in 1920 and more than nine times in 1925.

Before the reorganization there was a great gap between GM sales to dealers and dealer sales to users. This saddled the dealers or the corporation or both with considerable inventories and heavy extra expenses. The difficulty of the problem is indicated by the fact that the initial attempts to lessen the gap were not always successful. For example, in 1923 almost 10 per cent more cars were sold by GM to the dealers than the dealers sold to the public. This period of "oversupply" lasted from August 1923 to March 1924. But in 1925 there was almost perfect equilibrium (only a 1-per-cent gap), and this was maintained in subsequent years.

Better scheduling of inventories and production resulted in steadier employment. In 1925 the maximum number of employees varied only 11 per cent from the average; the minimum only 18 per cent from the average. While this was still a substantial variation in employment, it was a great improvement over past practices, the best performance in this area the corporation had ever

[14] As in other reorganizations, GM lost money initially. In 1922, John J. Raskob was able to declare the usual dividend only because a physical inventory check at Buick revealed several million dollars' worth of stock not found in the books!

achieved, and considerably better than the performance of competitors. It was also the basis for further substantial improvements.

Long-term Results

Subsequently, General Motors grew to be the largest manufacturing corporation in the world, with sales of more than ten billion dollars—more than General Electric, Westinghouse, Du Pont, and U.S. Steel together. Its total profits, after taxes, are greater than those of any other manufacturing corporation—and greater than the sales of any corporation except the few members of the "Billion Dollar Club" (1955).

ADMINISTRATIVE THOUGHT

It is often thought that the pioneering contributions to the body of administrative knowledge were made by the scientific management movement, especially by Frederick W. Taylor and his associates and successors. This group made outstanding advances in work measurement and methods improvement through increasing use of statistical and mathematical methods. Although its dogma of "the one best way" and the omission of physiological, psychological, and sociological considerations made its work less helpful than it might have been, the concepts it developed did help to raise worker productivity. But this was a science *for* management rather than scientific management; it was a tool like cost accounting or financial analysis. Though at some points the movement broke through to a total view of the administrative process with a call for a "mental revolution," its effects stopped at the worker or foreman level for the most part. Sloan's administrative ideology and "scientific" methodology, on the other hand, were applicable at the top level, and it is in no way disparaging to Taylor to say that Sloan, rather than Taylor, was a pioneer of scientific management.

Sloan's Administrative Ideology

Like Taylor, Sloan began his work in response to a specific need or problem. He did not evolve his plan in a vacuum; rather it was a pragmatic response to what appeared to be a series of overwhelming challenges. He had to win acceptance from divergent interests—from the financial interests of the Du Ponts and the Morgan bankers and from a group of highly ambitious executives

whose interests were largely operational. Persuasion of the latter, he knew, was necessary if results were to satisfy the financial interests.

As one means of attracting and holding outstanding associates, Sloan developed what might be called an "administrative ideology." Essentially it was a method of thinking about the administrative process. Fundamental was the thought that the process of administration should be decentralized but review or control should be centralized.

The decentralization theory was based on a concept somewhat akin to the theory of atomistic competition—each self-sufficient activity of the corporation would operate on its own within the over-all framework of the rules of a free enterprise system. Freedom of operation would make it possible for each activity and its leadership to contribute to the maximum of their abilities in the light of their superior knowledge of the local situation. Freedom of operation was tempered by veto power, but a coordinated control system set the framework within which the veto would be exercised, and this system provided for accountability.

This ideology was put in the form of statements, speeches, and letters and was frequently repeated and reinforced by example. Undoubtedly "decentralized operations and coordinated controls" had a powerful appeal to able men. It was inspirational, because it gave promise of greater opportunity for the individual. It convinced intellectually because it pointed out a way of overcoming the problem of diminishing returns from management as size increases.

Sloan's ideology helped to keep most of the good men at General Motors, since it gave them scope for their talents. Yet it kept within bounds that individualistic and separatist group which had forever threatened to break asunder in Durant's day.

"Scientific" methodology

But the ideology alone would not have been sufficient to rescue the corporation. It had to be translated into a general framework for guidance and a series of dimensions which could be tested like a scientific experiment or which might at least be developed to such a point through increasing systematization or rationalization

(like the German *Rationalisierungsprozess*). The methodology developed was never scientific in the sense that experiments in the physical sciences are, nor was it intended to be more than a systematic or factual approach that could be checked in a very rough fashion by results. Sloan's contributions to the methodology of the administrative process are essentially three: the planning process, the administrative framework, and the administrative skills.

Sloan developed the *planning process* in immediate response to the challenge of Durant's chaos and on the basis of his training as an engineer. In the debacle of 1920 he knew he would lose his job, his reputation, and his savings unless he produced results. He had to plan in such a way as to assure the reasonable fulfillment of his promises and the board's expectations.

Promise and fulfillment was, therefore, the keynote of the tremendously detailed, complex, and highly original method of planning for the future that was developed. This explains the independence and originality of GM's pricing policies (the base price of Chevrolet is said to be the one that all others follow), of its labor policies, public relations policies, and dealer relations policies. It explains Sloan's shift of emphasis from preoccupation with financial and technical problems to general administration, human relations, and, above all, sales (for example, the model changes which beat the predominance of the Ford Model T; Sloan is fond of recalling that the automobile industry started as a sports car industry).

And the "scientific" test of the plan is considered to be its results, which often show little deviation from the plans. Sloan the engineer, who had learned the importance of precision in every detail, transferred it to the planning process and eliminated, or at least greatly reduced, the uncertainty. As Sloan himself describes it:

> I instituted a system that provided scientific means of administration and control whereby the corporation would be able to project itself as much as possible into the future so as to discount changing trends and influences and also to be prepared at all times to alter its course promptly and effectively if the necessity arose.

The GM plan requires above all an *administrative framework*. This is a most carefully thought-out series of conventions, main-

tained throughout by an oral tradition. Freedom and control are closely balanced:

(a) Central management determines short- and long-range plans for the corporation as a whole as well as the scope within which each division operates, considering such factors as long-term growth, cyclical and seasonal variations, capacity, and competition. While planning takes into account the ideas and suggestions of the divisions, it accedes to them only in so far as they fit into the over-all plans and to that extent central management predetermines activities of the divisions.

(b) Central management fits the divisions into a pattern of operation set by the over-all plan, allotting to each division its role in the over-all scheme. It sets production goals, based on general economic factors and a minimum quota for each division, decides capital and current expenditure allocation, determines major appointments, salary changes, and bonus allotments, and makes major policy decisions affecting all the divisions.

(c) Staff aid at various levels is provided to help the divisions meet the goals and to measure the results.

(d) Provision is made for integration of viewpoints and for teaching. In the formative days Sloan made frequent visits to the plants, particularly in the car and truck divisions, to contact those on the grounds. General managers of these divisions were called into Detroit once or twice a month for meetings, and often representatives of the specialized staffs sat in. These sessions led to the creation of policy groups to contend with specialized phases of the business, such as sales and distribution, engineering, labor relations, styling. Group meetings took on the characteristics of seminars; Sloan generally sat in, and although he would explain his viewpoint on specific questions as they arose, he encouraged debate, different points of view, and he delayed the final decision until the underlying concept was accepted by those who must carry out the decision. This kind of procedure was calculated to provide training and elicit contributions to fundamental policy from those down the line.

(e) Division managers handle production and sales distribution in the plants and sales agencies of their divisions; appoint personnel except top executives; determine factory methods and equip-

ment; handle most purchases, dealer contracts and franchises, and certain aspects of advertising and public relations, though their decisions may be subject to review and challenge by central management.

The *administrative skills* originated mostly from the factual observations of Sloan and his associates and were then evolved through what might be called an "integration of expert advice." Usually one man would think up the central idea in response to many pressures or as a result of group discussion.

The scientific methodology of GM depends on its over-all plans. But the build-up of the plans and their execution is only as good as the administrative skills which go into their development. Some of these skills have been highly developed—for example, forecasting and the controls. Others have undergone long periods of study, and Sloan and his associates have made major contributions to their improvement.

The development of organizational skills as described below is one example. Here the method of development was in part empirical, in part comparative.

The organization developed empirically in response to needs and experience. Thus decentralization of operations was a necessity in the beginning, because the new GM top managers were not familiar enough with the actual production and selling of cars. They were busy with over-all problems, hence the distinction between policy-making and execution. They were forced to provide some immediate over-all objectives and consistent methods of meeting them, hence the development of central coordination and controls. Staffs developed in response to specific needs. For example, GM cars, like others of the time, were painted black. Fred Fisher (of Fisher Bodies) thought colors would make the product more attractive. That led to the establishment of an arts and colors department—a new staff activity. Similarly, the added management controls required "staffs" of various kinds.

The comparative method of organization development is illustrated by the line and staff concept, drawn largely from the military and adapted to the needs of GM. Though Sloan opposes the use of military methods, he says that "the advisory staff might be compared with the Army organization where you have line officers

and advisory officers." He also followed the military distinction of general, special, and personal staffs. In addition, he may have drawn on his early (1906) experience with the New York Telephone Company and on special studies at Du Pont. The use of the hierarchical or scalar principle, the establishment of so-called semi-independent units, may be based on some of the thinking of the Roman Catholic Church, which has some of the same organizational problems experienced by a large industrial organization—large size, complexity, the need for perpetuation and channels of communication, and so forth. But though Sloan and his associates used the comparative method of study to determine the organization of GM, in each case they made allowance for major differences between institutions, and the final product was a highly original adaptation.

THE FUTURE

In any consideration of the future of General Motors, the basic question is, of course, the efficacy of Sloan's ideology and scientific methodology after his departure. His "system" was designed not only to provide a factual basis for managerial decision-making, but to minimize dependence on any one individual by enabling the company to draw on the ideas of a large group of executives at several levels. If the system is to be considered entirely successful, therefore, it must not depend on the presence of the individual, Sloan.

A fortunate combination of outstanding individuals of diverse talents launched the new GM model in the early 1920s. There were some major differences of opinion among them—for example, between Sloan and the Du Ponts over the nature and powers of the top committees and over such questions as the integration of organized labor in the corporate structure and its participation in corporate revenue—but they were bound together by similarity of outlook and personal friendship. The old leadership, men like Sloan, Kettering, Mott, and some of the Du Ponts, held substantial blocks of shares in GM. While these holdings were not substantial percentagewise, they were large in absolute dollar sums, running into millions of dollars and constituting a major part of each individual's savings, investments that he could influence for good or

ill by his administrative actions. GM's ideology was originated and developed by men who might also be called owner-managers; it was partly forced on them in order to overcome the then existing independence of formerly separately owned companies. It was the coordination, control, and staff services that were novel.

Being "founding fathers" and collaborating over several decades, these men were able to maintain the framework of "decentralized operations and coordinated control" by oral tradition and to interpret, amend, and improve it as times and personalities changed. Those who built up the concept lived within its boundaries without too much difficulty.

But it is not evident that its intent is entirely clear to the successors of this group. There appear to be major differences among them in the concepts of delegation and final decision-making. To what extent, therefore, will the GM executives of the future be able to work with an ideology that they did not create and may not entirely understand?

Even though Sloan frequently made the final decision, he employed group management in the sense that he relied on research and scientific findings, listened to recommendations, asked questions, might refuse to overrule the decision of a subordinate until the latter had made a number of mistakes, and drew men out by the device of the chummy but inexorable "request for cooperation."

Now it appears that the present chief executive, Harlow C. Curtice, makes an increasing number of decisions himself—a recent GM chart in *Business Week* shows him in seven different boxes—his "span of control" is greater than that of his predecessors; he no longer has a "chief of staff." It may be that the belated extension of dealer franchises shows some inelasticity of adjustment within the organization.

Then, as "fact-finding" by central bodies tends to cover more and more phases of operations, the work of the division managers tends to become increasingly predetermined, one might almost say predestined. It will be hard to find justification for going contrary to "facts" centrally determined.

There appear to be other administrative changes that may lead to a less effective "system." Is the retention in active service of some

of the "founding fathers" beyond age sixty-five a partial indication of the difficulty of ideological transference?

GM's scientific methodology is likely to prove more durable. The objective approach of the new management techniques, the ability to analyze events and explain them, the power of forecasting and controlling results are skills that can be acquired and constantly improved, and the application of them at GM constitutes a permanent contribution to scientific management. But these techniques can and are being copied by competition all the time. GM's competitive edge can be maintained only by a greater rate of improvement of administrative thought and skill and by the introduction of newer techniques. It is planned that this will be done by the new generation at GM, possibly with three or four back-up men for each key job. But to what extent will there be some succession simply because of seniority and friendship? To what extent will there be frustration and resignations because of long waits for promotion? To what extent are the "middle-aged Turks" protecting their "intellectual investments" in the time-proven methodology against the criticism of the "young Turks"? How good are the successors to Sloan (picked in part by him through his influence as board chairman and member of the bonus committee)? Are they picked in his image or as best adapted to the circumstances? And, finally, how much of an independent contribution and inquiring mind is permitted today and how far down in the executive ranks? To what extent can GM continue its present product mix? Is GM at the point where it should stop growing in auto market share and and should shift to other fields? Is GM placing too much emphasis on market share as compared to maximization of profits? To what extent will social and non-economic factors require consideration in future decisions?

Thus the organizer Sloan, who replaced innovating genius by an ideology and a scientific methodology, may have succeeded only partially in making his system deterministic beyond his own period of service. A new or more highly developed ideology and scientific methodology may be needed to replace Sloan's guiding influence in the required adaptations of the future.

This will be the task of the new organizers at GM. How will they make the transition as the organizing giants pass from the scene?

What will be their performance relative to their competitors and their absolute contribution to the advancement of scientific administration? These will be the criteria for judging the success of the future organizers of GM.

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Talcott Parsons

Suggestions for a Sociological Approach to the Theory of Organizations—I

This and a companion paper to appear in the next issue attempt to outline an approach to the analysis of formal organizations in terms of the general theory of social systems. An organization is defined as a social system oriented to the attainment of a relatively specific type of goal, which contributes to a major function of a more comprehensive system, usually the society. Such an organization is analyzed in terms of an institutionalized value system, above all defining and legitimizing its goal, and of the mechanisms by which it is articulated with the rest of the society in which it operates. There are three primary contexts of this articulation: (1) procurement of the necessary resources, financing, personal services, and "organization" in the economic sense; (2) the operative code centering on decisions which are classified as policy decisions, allocative decisions, and coordinating decisions; and (3) the institutional structure which integrates the organization with others, centering on contract, authority, and the institutionalization of universalistic rules.

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FOR the purposes of this article the term "organization" will be used to refer to a broad type of collectivity which has assumed a particularly important place in modern industrial societies—the

type to which the term "bureaucracy" is most often applied. Familiar examples are the governmental bureau or department, the business firm (especially above a certain size), the university, and the hospital. It is by now almost a commonplace that there are features common to all these types of organization which cut across the ordinary distinctions between the social science disciplines. Something is lost if study of the firm is left only to economists, of governmental organizations to political scientists, and of schools and universities to "educationists."[1]

The study of organization in the present sense is thus only part of the study of social structure as that term is generally used by sociologists (or of "social organization" as ordinarily used by social anthropologists). A family is only partly an organization; most other kinship groups are even less so. The same is certainly true of local communities, regional subsocieties, and of a society as a whole conceived, for example, as a nation. On other levels, informal work groups, cliques of friends, and so on, are not in this technical sense organizations.

THE CONCEPT OF ORGANIZATION

As a formal analytical point of reference, *primacy of orientation to the attainment of a specific goal* is used as the defining characteristic of an organization which distinguishes it from other types of social systems. This criterion has implications for both the external relations and the internal structure of the system referred to here as an organization.

The attainment of a goal is defined as a *relation* between a system (in this case a social system) and the relevant parts of the external situation in which it acts or operates. This relation can be conceived as the maximization, relative to the relevant conditions such as costs and obstacles, of some category of *output* of the

[1]There is already a considerable literature on organization which cuts across disciplinary lines. It is not the intention of this paper to attempt to review it. Three writers have been particularly important in stimulating the author's thinking in the field: Max Weber, Chester I. Barnard, and Herbert Simon. See particularly, Weber, *Theory of Social and Economic Organization* (New York, 1947), ch. iii; Barnard, *The Functions of the Executive* (Cambridge, Mass., 1938); Simon, *Administrative Behavior: A Study of Decision Making Processes in Administrative Organization* (New York, 1951).

system to objects or systems in the external situation. These considerations yield a further important criterion of an organization. An organization is a system which, as the attainment of its goal, "produces" an identifiable something which can be utilized in some way by another system; that is, the output of the organization is, for some other system, an input. In the case of an organization with economic primacy, this output may be a class of goods or services which are either consumable or serve as instruments for a further phase of the production process by other organizations. In the case of a government agency the output may be a class of regulatory decisions; in that of an educational organization it may be a certain type of "trained capacity" on the part of the students who have been subjected to its influence. In any of these cases there must be a set of consequences of the processes which go on within the organization, which make a difference to the functioning of some other subsystem of the society; that is, without the production of certain goods the consuming unit must behave differently, i.e., suffer a "deprivation."

The availability, to the unit succeeding the organization in the series, of the organization's output must be subject to some sort of terms, the settlement of which is analyzable in the general framework of the ideas of contract or exchange. Thus in the familiar case the economic producer "sells" his product for a money price which in turn serves as a medium for procuring the factors of production, most directly labor services, necessary for further stages of the productive process. It is thus assumed that in the case of all organizations there is something analogous to a "market" for the output which constitutes the attainment of its goal (what Chester I. Barnard calls "organization purpose"); and that directly, and perhaps also indirectly, there is some kind of exchange of this for entities which (as inputs into it) are important means for the organization to carry out its function in the larger system. The exchange of output for input at the boundary defined by the attainment of the goal of an organization need not be the only important boundary-exchange of the organization as a system. It is, however, the one most directly involved in defining the primary characteristics of the organization. Others will be discussed later.

The existence of organizations as the concept is here set forth

is a consequence of the division of labor in society. Where both the "production" of specialized outputs and their consumption or ultimate utilization occur within the same structural unit, there is no need for the differentiation of specialized organizations. Primitive societies in so far as their units are "self-sufficient" in both economic and other senses generally do not have clear-cut differentiated organizations in the present sense.

In its internal reference, the primacy of goal-attainment among the functions of a social system gives priority to those processes most directly involved with the success or failure of goal-oriented endeavors. This means essentially the decision-making process, which controls the utilization of the resources of the system as a whole in the interest of the goal, and the processes by which those responsible for such decisions can count on the mobilization of these resources in the interest of a goal. These mechanisms of mobilization constitute what we ordinarily think of as the development of power in a political sense.

What from the point of view of the organization in question is its specified goal is, from the point of view of the larger system of which it is a differentiated part or subsystem, a specialized or differentiated function. This relationship is the primary link between an organization and the larger system of which it is a part, and provides a basis for the classification of types of organization. However, it cannot be the only important link.

This article will attempt to analyze both this link and the other principal ones, using as a point of departure the treatment of the organization as a social system. First, it will be treated as a system which is characterized by all the properties which are essential to any social system. Secondly, it will be treated as a functionally differentiated subsystem of a larger social system. Hence it will be the other subsystems of the larger one which constitute the situation or environment in which the organization operates. An organization, then, will have to be analyzed as the special type of social system organized about the primacy of interest in the attainment of a particular type of system goal. Certain of its special features will derive from goal-primacy in general and others from the primacy of the particular type of goal. Finally, the characteristics of the organization will be defined by the kind of situation

in which it has to operate, which will consist of the relations obtaining between it and the other specialized subsystems of the larger system of which it is a part. The latter can for most purposes be assumed to be a society.

THE STRUCTURF OF ORGANIZATIONS

Like any social system, an organization is conceived as having a describable structure. This can be described and analyzed from two points of view, both of which are essential to completeness. The first is the "cultural-institutional" point of view which uses the values of the system and their institutionalization in different functional contexts as its point of departure; the second is the "group" or "role" point of view which takes suborganizations and the roles of individuals participating in the functioning of the organization as its point of departure. Both of these will be discussed, as will their broad relations to each other, but primary attention will be given to the former.

On what has just been called the cultural-institutional level, a minimal description of an organization will have to include an outline of the system of values which defines its functions and of the main institutional patterns which spell out these values in the more concrete functional contexts of goal-attainment itself, adaptation to the situation, and integration of the system. There are other aspects, such as technical lore, ideology, and ritual symbolization, which cannot, for reasons of space, be taken up here.

The main point of reference for analyzing the structure of any social system is its value pattern. This defines the basic orientation of the system (in the present case, the organization) to the situation in which it operates; hence it guides the activities of participant individuals.

In the case of an organization as defined above, this value system must by definition be a subvalue system of a higher-order one, since the organization is always defined as a subsystem of a more comprehensive social system. Two conclusions follow: First, the value system of the organization must imply basic acceptance of the more generalized values of the superordinate system—unless it is a deviant organization not integrated into the superordinate system. Secondly, on the requisite level of generality, the most essential

feature of the value system of an organization is the evaluative *legitimation* of its place or "role" in the superordinate system.

Since it has been assumed that an organization is defined by the primacy of a type of goal, the focus of its value system must be the legitimation of this goal in terms of the functional significance of its attainment for the superordinate system, and secondly the legitimation of the primacy of this goal over other possible interests and values of the organization and its members. Thus the value system of a business firm in our society is a version of "economic rationality" which legitimizes the goal of economic production (specified to the requisite level of concreteness in terms of particular goods and services). Devotion of the organization (and hence the resources it controls) to production is legitimized as is the maintenance of the primacy of this goal over other functional interests which may arise within the organization. This is Barnard's "organization purpose."[2] For the business firm, money return is a primary measure and symbol of success and is thus *part* of the goal-structure of the organization. But it cannot be the primary organization goal because profit-making is not by itself a function on behalf of the society as a system.

In the most general sense the values of the organization legitimize its existence as a system. But more specifically they legitimize the main functional patterns of operation which are necessary to implement the values, in this case the system goal, under typical conditions of the concrete situation. Hence, besides legitimation of the goal-type and its primacy over other interests, there will be legitimation of various categories of relatively specific subgoals and the operative procedures necessary for their attainment. There will further be normative rules governing the adaptive processes of the organization, the general principles on which facilities can be procured and handled, and there will be rules or principles governing the integration of the organization, particularly in defining the obligations of loyalty of participants to the organization as compared with the loyalties they bear in other roles.

A more familiar approach to the structure of an organization is through its constituent personnel and the roles they play in its functioning. Thus we ordinarily think of an organization as having

[2]Barnard, *op. cit.*, pt. II, ch. vii.

some kind of "management" or "administration"—a group of people carrying some kind of special responsibility for the organization's affairs, usually formulated as "policy formation" or "decision-making." Then under the control of this top group we would conceive of various operative groups arranged in "line" formation down to the lowest in the line of authority. In a somewhat different relation we would also think of various groups performing "staff" functions, usually some kinds of experts who stand in an advisory capacity to the decision-makers at the various levels, but who do not themselves exercise "line" authority.

It seems advantageous for present purposes to carry through mainly with the analysis of the institutional structure of the organization. Using the value system as the main point of reference, the discussion of this structure can be divided into three main headings. The primary adaptive exigencies of an organization concern the procurement of the resources necessary for it to attain its goal or carry out its function; hence one major field of institutionalization concerns the modes of procurement of these resources. Secondly, the organization will itself have to have institutionalized procedures by which these resources are brought to bear in the concrete processes of goal-attainment; and, finally, there will have to be institutional patterns defining and regulating the limits of commitments to this organization as compared with others in which the same persons and other resource-controllers are involved, patterns which can be generalized on a basis tolerable to the society as a whole.

THE MOBILIZATION OF FLUID RESOURCES

The resources which an organization must utilize are, given the social structure of the situation in which it functions, the factors of production as these concepts are used in economic theory. They are land, labor, capital, and "organization" in a somewhat different sense from that used mainly in this paper.[3]

The factor of land stands on a somewhat different level from the other three. If we treat an organization, for purposes of analysis, as an already established and going concern, then, like any other

[3]This possibly confusing terminological duplication is retained here because organization as a factor is commonly referred to in economic theory.

social system, we can think of it as being in control of certain facilities for access to which it is not dependent on the maintenance of short-run economic sanctions. It has full ownership of certain physical facilities such as physical land and relatively nondepreciating or nonobsolescing buildings. It may have certain traditions, particularly involving technical know-how factors which are not directly involved in the market nexus. The more fully the market nexus is developed, however, the less can it be said that an organization has very important assets which are withdrawn from the market. Even sites of long operation can be sold and new locations found and even the most deeply committed personnel may resign to take other positions or retire, and in either case have to be replaced through the labor market. The core of this aspect of the "land" complex is thus a set of commitments of resources on value grounds.

The two most fluid factors, however, are labor and capital in the economic sense. The overwhelming bulk of personal service takes place in occupational roles. This means that it is *contracted for* on some sector of the labor market. It is not based on ascription of status, through kinship or otherwise, but depends on the specific terms settled between the management of the organization and the incumbent. There are, of course, many types of contract of employment. Some variations concern the agents involved in the settlement of terms; for example, collective bargaining is very different from individual bargaining. Others concern the duration of commitments, varying all the way from a casual relation terminable at will, to a tenure appointment.

But most important, only in a limiting case are the specific *ad hoc* terms—balancing specifically defined services against specific monetary remuneration—anything like exhaustive of the empirically important factors involved in the contract of employment. The labor market cannot, in the economic sense, closely approach being a "perfect market." It has different degrees and types of imperfection according to whether the employer is one or another type of organization and according to what type of human service is involved. A few of these differences will be noted in later illustrations. Here the essential point is that, with the differentiation of functionally specified organizations from the matrix of diffuse

social groupings, such organizations become increasingly dependent on explicit contracts of employment for their human services.

Attention may be called to one particularly important differentiation among types of relation existing between the performer of services and the recipients of the ultimate "product." In the typical case of manufacturing industry the typical worker works within the organization. The end result is a physical commodity which is then sold to consumers. The worker has no personal contact with the customer of the firm; indeed no representative of the firm need have such contact except to arrange the settlement of the terms of sale. Where, however, the "product" is a personal service, the situation is quite different; the worker must have personal contact with the consumer during the actual performance of the service.

One way in which service can be organized is the case where neither performer nor "customer" belongs to an organization. Private professional practice is a type case, and doctor and patient, for example, come to constitute a small-scale solidary collectivity of their own. This is the main basis of the sliding scale as a pattern of remuneration. A second mode of organization is the one which assimilates the provision of service to the normal pattern involved in the production of physical commodities; the recipient is a "customer" who pays on a value-of-service basis, with prices determined by commercial competition. This pattern is approached in the case of such services as barbering.

But particularly in the case of professional services there is another very important pattern, where the recipient of the service becames an operative member of the service-providing organization. The school, university, and hospital are type cases illustrating this pattern. The phrase "member of the university" definitely includes students. The faculty are in a sense dually employed, on the one hand by their students, on the other by the university administration. The transition is particularly clear in the case of the hospital. In private practice the patient is unequivocally the "employer." But in hospital practice the hospital organization employs a professional staff on behalf of the patients, as it were. This taking of the customer *into* the organization has important implications for the nature of the organization.

In a society like ours the requirements of an organization for fluid resources are in one sense and on one level overwhelmingly met through financing, i.e., through the provision of money funds at the disposal of the organization.[4] This applies both to physical facilities, equipment, materials, buildings, and to the employment of human services—indeed also to cultural resources in that the rights to use patented processes may be bought. Hence the availability of adequate financing is always a vital problem for every organization operating in a monetary economy no matter what its goal-type may be; it is as vital for churches, symphony orchestras, and universities as it is for business firms.

The mechanisms through which financial resources are made available differ enormously, however, with different types of organization. All except the "purest" charitable organizations depend to some extent on the returns they receive for purveying some kind of a product, be it a commodity, or a service like education or music. But even within this range there is an enormous variation in the adequacy of this return for fully meeting financial needs. The business firm is at one pole in this respect. Its normal expectation is that in the long run it will be able to finance itself adequately from the proceeds of sales. But even here this is true only in the long run; investment of capital in anticipation of future proceeds is of course one of the most important mechanisms in our society.

Two other important mechanisms are taxation and voluntary contributions. In a "free enterprise" economy the general principle governing financing by taxation is that organizations will be supported out of taxation (1) if the goal is regarded as important enough but organizations devoted to it cannot be made to "pay" as private enterprises by providing the service on a commercial basis, e.g., the care of large numbers of persons from the lower income groups who (by current standards) need to be hospitalized for mental illnesses, or (2) if the *ways* in which the services would be provided by private enterprise might jeopardize the public interest, e.g., the provision of military force for the national defense might conceivably be contracted out, but placing control of force to this degree in private hands would constitute too serious a

[4]Weber, *op. cit.*, ch. iii.

threat to the political stability of the society. Others in these categories are left to the "voluntary" principle, if they are publicly sanctioned, generally in the form of "nonprofit" organizations.

It is important to note that financing of organizations is in general "affected with a public interest" and is in some degree to be regarded as an exercise of political power. This consideration derives from the character of an organization as a goal-directed social system. Every subgoal within the society must to some degree be integrated with the goal-structure of the society as a whole, and it is with this societal goal-structure that political institutions are above all concerned.[5]

The last of the four factors of production is what certain economists, notably Alfred Marshall, have called "organization" in the technical sense referred to above. This refers to the function of *combining* the factors of production in such ways as to facilitate the effective attainment of the organization's goal (in our general sense, in its "economic" or factor-consuming aspects). Its input into the organization stands on a level different from that of labor services and financing since it does not concern the direct facilities for carrying out defined functions in a relatively routine manner, but instead concerns readjustment in the patterns of organization itself. It is, therefore, primarily significant in the longer run perspective, and it is involved in processes of structural change in the organization. In its business reference it is what J. A. Schumpeter referred to as "entrepreneurship."[6] Organization in this economic sense is, however, an essential factor in *all* organizational functioning. It necessarily plays a central part in the "founding" stages of any organization. From time to time it is important in later stages, since the kinds of adjustments to changing situations which are possible through the routine mechanisms of recruitment of labor services, and through the various devices for securing adequate financial resources, prove to be inadequate; hence a more fundamental structural change in the organization becomes necessary or desirable. This change would, in the present frame of reference, require a

[5]This general thesis of the relation between financing and political power and the public interest has been developed by Parsons and Smelser, *Economy and Society* (London, 1956), especially in chapters ii and iii.

[6]J. A. Schumpeter, *The Theory of Economic Development* (Cambridge, Mass.), 1934.

special input of the factor of organization in this technical sense.

The more generalized equivalent of the land factor is treated, except for the longest-run and most profound social changes, as the most constant reference point of all; its essential reference base is the stability of the value system in terms of which the goal of the organization is defined and the commitments involved in it are legitimized. It is from this reference base that the norms defining the broadly expected types of mechanism in the other respects will be derived, particularly those most actively involved in short-run operations, namely the recruitment of human services through the labor market and the financing of the organization.

THE MECHANISMS OF IMPLEMENTATION

The problem of mobilizing fluid resources concerns one major aspect of the external relations of the organization to the situation in which it operates. Once possessing control of the necessary resources, then, it must have a set of mechanisms by which these resources can be brought to bear on the actual process of goal-implementation in a changing situation. From one point of view, there are two aspects of this process. First is the set of relations to the external situation centering around the problem of "disposal" of the "product" of the organization's activities. This involves the basis on which the scale of operations is estimated and on which the settlement of terms with the recipients of this product is arrived at. In the economic context it is the problem of "marketing," but for present purposes it is necessary to generalize this concept to include all products of organization functioning whether they are "sold" or not; for example, the products of a military organization may be said to be disposed of immediately to the executive and legislative branches of the government and through them to the public, but of course in no direct sense are they sold. The second aspect of the process is concerned with the internal mechanisms of the mobilization of resources for the implementation of the goal. For purposes of the present analysis, however, it will not be necessary to treat these internal and external references separately. Both, as distinguished from the mobilization of resources, can be treated together as governed by the "operative code" of the organization.

This code will have to have an essential basis in the value system which governs the organization. In the case of mobilization of resources, this basis concerns the problem of the "claims" of the organization to the resources it needs and hence the settlement of the terms on which they would be available to it. In the operative case it concerns the manner of their utilization within the organization and the relation to its beneficiaries. We may speak of the relevant value-implementation as centering about the question of "authorization" of the measures involved in carrying through the processes of utilization of resources.

There is an important sense in which the focus of all these functions is the process ordinarily called "decision-making." We have assumed that goal-attainment has clear primacy in the functioning of the organization. The paramount set of decisions then will be, within the framework of legitimation previously referred to, the set of decisions as to how, on the more generalized level, to take steps to attain the goal. This is what is generally thought of as the area of *policy* decisions. A second set of decisions concerns implementation in the sense of decisions about the utilization of resources available to the organization. These are the *allocative* decisions and concern two main subject matters: the allocation of responsibilities among personnel, i.e., suborganizations and individuals, and the allocation of fluid resources, i.e., manpower and monetary and physical facilities in accord with these responsibilities. Finally, a third set of decisions concerns maintaining the *integration* of the organization, through facilitating cooperation and dealing with the motivational problems which arise within the organization in relation to the maintenance of cooperation. The first two sets of decisions fall within the area which Barnard calls the problem of "effectiveness"; the third is the locus of the problem of "efficiency" in his sense.[7] Let us consider each of these decision areas in more detail.

Policy Decisions

By policy decisions are meant decisions which relatively directly commit the organization as a whole and which stand in relatively direct connection to its primary functions. They are decisions

[7]Barnard, *op. cit.*, pt. I, ch. v.

touching such matters as determination of the nature and quality standards of "product," changes in the scale of operations, problems of the approach to the recipients of the product or service, and organization-wide problems of modes of internal operation.

Policy decisions as thus conceived may be taken at different levels of generality with respect to the functions of the organization. The very highest level concerns decisions to set up a given organization or, conversely, to liquidate it. Near that level is a decision to merge with one or more other organizations. Then the scale descends through such levels as major changes in type of product or in scale of operations, to the day-to-day decisions about current operation. Broadly, this level of generality scale coincides with a scale of time-span of the relevance of decisions; the ones touching the longer-run problems of the organization tend to be the ones on a higher level of generality, involving a wider range of considerations and leading to more serious commitments. An important task for the theory of organization is a systematic classification of these levels of generality of decisions.

As has been noted, the critical feature of policy decisions is the fact that they commit the organization as a whole to carrying out their implications. This area of decisions is the focus of the problem of responsibility. One but only one major aspect of responsibility in turn lies in the fact that all operations of organization to some extent involve risks, and the decision-maker on the one hand is to some extent given "credit" for success, and on the other hand is legitimately held responsible for unfavorable consequences. One of the major features of roles of responsibility is the handling of these consequences; this becomes particularly complicated psychologically because it is often impossible to assess accurately the extent to which success or failure in fact stem from particular decisions or result from factors outside the control or predictive powers of the decision-maker. On high levels of responsibility conflicts of moral value may also operate.[8]

Because of the commitment of the organization as a whole, and through this of the interests of everyone participating in the organization to a greater or lesser degree, authorization becomes particularly important at the policy-decision level. This clearly con-

[8] *Ibid.*, ch. xvii.

nects with the value system and hence with the problem of legitimacy. It concerns not simply the content of particular decisions, but the right to make them.

Different organizations, according to scale and qualitative type, of course, have different concrete ways of organizing the policy-making process. Often the highest level of policy is placed mainly in the hands of some kind of a board; whereas "management" has responsibility for the next highest levels, with the still lower levels delegated to operative echelons.

Allocative Decisions

Higher policy decisions will concern the general type and quantity of resources brought into the organization and the more general policies toward personnel recruitment and financing. But the operative utilization of these facilities cannot be completely controlled from the center. There must be some allocative organization by which resources are distributed within the organization, and responsibility for their utilization in the various necessary operative tasks is assigned. This means that specialization in the functions of administration or management precludes the incumbents of these functions from also carrying out the main technical procedures involved in the organization-goal, and hence making the main operating decisions at the "work" level. Thus, a commanding general cannot actually man a particular aircraft or command a particular battery of artillery; a university president cannot actively teach all the subjects of instruction for which the university is responsible.

From one point of view, these mechanisms of internal allocation may be treated as "delegations of authority," though this formula will have to be qualified in connection with various cross-cutting considerations of types of competence and so forth. Thus a general, who by training and experience has been an artilleryman, when he is in command does not simply "delegate" authority to the air element under his command; he must in some way recognize the special technical competence of the air people in a field where he cannot have such competence. Similarly a university president who by academic training has been a professor of English does not merely delegate authority to the physicists on his faculty. Both must recognize an independent technical basis for "lower" echelons

performing their functions in the ways in which their own technical judgment makes advisable. The technical man can reasonably be held responsible for the *results* of his operations; he cannot, however, be "dictated to" with respect to the technical procedures by which he achieves these results.

Seen in this light, there are two main aspects of the allocative decision process. One concerns mainly personnel (organized in suborganizations, for example, "departments"), the other financial and, at the requisite level, physical facilities. In the case of personnel the fundamental consideration is the allocation of responsibility. Using decisions as the reference point, the primary focus of the responsibility problem is allocation of the responsibility to decide, i.e., the "decision who should decide," as Barnard puts it. Technical operations as such may then be treated as controlled by the allocation of responsibility for decisions.

The second main aspect of the allocation process is the budget. Though generally formalized only in rather large and highly differentiated organizations, analytically the budget is a central conception. It means the allocation of fluid financial resources which in turn can be committed to particular "uses," namely, acquisition of physical facilities and employment of personnel. Allocation of responsibility is definition of the *functions* of humanly organized subsystems of personnel. Budget allocation is giving these suborganizations access to the necessary means of carrying out their assignment. There is a certain important crisscrossing of the two lines in that at the higher level the decision tends to be one of budget, leaving the employment of the relevant personnel to the subsystem to which funds are allocated. The people responsible at the level in question in turn divide the resource stream, devoting part of it to personnel the employment of whom is, subject to general policies, under their control, another part to subbudget allocation of funds to the uses of personnel they employ. This step-down series continues until the personnel in question are given only various types and levels of control or use of physical facilities, and not control of funds.

Coordination Decisions

Two types of operative decisions have so far been discussed, namely policy decisions and allocative decisions. There is a third

category which may be called "decisions of coordination," involving what Barnard has called the problems of "efficiency." These decisions are the operative decisions concerned with the integration of the organization as a system. Our two types of fundamental resources have a sharply asymmetrical relation to these decisions as they do to the allocative decisions. Funds (considered apart from their lenders or other suppliers) and physical resources do not have to be motivated to cooperate in organizational tasks, but human agents do. Decisions of policy and decisions of the allocation of responsibility still leave open the question of motivation to adequate performance.

This becomes an integrative problem because the special types of performance required to achieve the many complex contributions to an organization goal cannot be presumed to be motivated by the mere "nature" of the participants independently of the sanctions operating in the organizational situation. What is coordination from the point of view of the operation of the organization is "cooperation" from the point of view of the personnel. The limiting case of noncooperation is declining to continue employment in the organization, a case of by no means negligible importance where a free labor market exists. But short of this, relative to the goals of the organization, it is reasonable to postulate an inherent centrifugal tendency of subunits of the organization, a tendency reflecting pulls deriving from the personalities of the participants, from the special adaptive exigencies of their particular job situations, and possibly from other sources.

In this situation the management of the organization must, to some degree, take or be ready to take measures to counteract the centrifugal pull, to keep employment turnover at least down to tolerable levels, and internally to bring the performances of subunits and individuals more closely into line with the requirements of the organization than would otherwise be the case. These measures can take any one or a combination of three fundamental forms: (1) coercion—in that penalties for noncooperation are set, (2) inducement—in that rewards for valued performance are instituted, and (3) "therapy"—in that by a complex and judicious combination of measures the motivational obstacles to satisfactory cooperation are dealt with on a level which "goes behind" the

overt ostensible reasons given for the difficulty by the persons involved.[9]

INSTITUTIONAL FACTORS IN THE STRUCTURE OF ORGANIZATIONS

So far two problems have been dealt with, that of the adaptation of an organization to the situation in which it must operate, and that of its operative goal-attainment mechanisms. These prove to be capable of formulation in terms of the mechanisms of mobilization of fluid resources and of the central decision-making processes, respectively. There is, however, another central problem area which is not covered by these considerations, namely that of the mechanisms by which the organization is integrated with[10] other organizations and other types of collectivity in the total social system. This is not a matter of the organization in question treating its *social* situation or environment instrumentally, as a source for the procurement of resources or as the functionally defined field in which it produces its goal-attainment output and makes it available on agreed (or somehow settled) terms to other units of the social structure.

The problem concerns rather the *compatibility* of the institutional patterns under which the organization operates with those of other organizations and social units, as related to the integrative exigencies of the society as a whole (or of subsystems wider than the organization in question). It is hence in one aspect a question of the generalizability of the patterns of procedure adopted in the particular organization and hence of their permissibility from a wider social point of view. For example, if a given firm hires and fires on certain bases, will other firms in the same industry be allowed to follow this precedent? Or if the security officers in the

[9]The famous phenomenon of restriction of production in the informal group as reported by F. J. Roethlisberger and W. J. Dickson *(Management and the Worker* [Cambridge, Mass., 1939], pt. IV) is a case of relative failure of integration and hence, from one point of view, of failure of management in the function of coordination. It could be handled, from the present point of view, neither by policy decisions (e.g., not to hire "uncooperative workers") nor by allocative decisions (e.g., to hold the shop boss strictly responsible for meeting high production quotas), but only by decisions of coordination, presumably including "therapeutic" measures.

[10]Not "adapted to." Adaptation has been considered under the headings already treated.

Department of Defense follow a given procedure in dealing with alleged security risks, can the same procedure be tolerated in the State Department? If the two sets of procedures are in conflict, can the two organizations continue to differ or must they be subjected to a common set of principles?

It has already been noted that the integrative problem within an organization most directly concerns the human agents. This point can be generalized to interorganizational integration. The central problem concerns the institutionalized norms which can effectively bind the actions of individuals in their commitments to organizations. An important feature of all complex societies is that the normal individual is involved in a multiplicity of roles. From one point of view these roles constitute memberships in or commitments to collectivities, of which in turn organizations are one principal type. The focus of the integrative problem on a transorganizational level, then, is the problem of the determination of the loyalties of participant persons: on the one hand, the level of loyalty he bears to a particular organization (in which, for example, he is employed) and the bases of this loyalty; on the other hand, the way in which this loyalty fits into the larger system of loyalties in which his obligations to a plurality of roles are balanced (for example, to his job, family, and country). Clearly this allocation of loyalties, not within the organization but within the society between collectivities, is intimately connected with values. It cannot be only the values of the organization which govern, it must also be a higher-level value system, since the individual cannot determine his loyalties to the organization only on the basis of the values of that particular organization unless in some special sense it claims, and enforces the claim, to absolute loyalty. This is a limiting case, most nearly exemplified in our time by the totalitarian state.

There are three primary complexes of these integrative patterns which have the same order of hierarchical relation to each other that has been sketched for the case of decision-types. Particularly in a society where ascriptive elements of status are relatively minimized, the focal integrative institution is, from one point of view, that of contract. As applied to organizations, this is primarily relevant to the contract of employment. It is the contract of employ-

ment—including not only explicitly agreed terms, but "implicit" understandings and also including what Emile Durkheim called the "noncontractual" elements, i.e., the norms governing the making and implementation of contracts which the parties are not at liberty to alter at will—which defines the individual's obligations to the organization. When for any reason the performance of these obligations is brought into question, the problem of loyalty is raised. Limitations on claims of loyalty made by the organization will arise from one or both of two sources, either the personality of the role-incumbent, in that doing what is asked may conflict with his personal values or may otherwise be motivationally distasteful to him, or from other role-obligations, for example, certain requests for overtime work may conflict with obligations to his family. The institution of contract regulates these possible conflicts through patterns which can apply to the organization in question but which at the same time can be motivationally acceptable to most people as "reasonable" and take into account the interests of the other role-complexes in which the same people are involved. Quite clearly the decisions about what particular personnel to hire may be a prerogative exclusively of the organization; the definitions of the institution of contract can in the nature of the case never be the prerogative of one organization, but, with variations, they must regulate the functioning of every organization in the society.

The contract of employment brings out the central significance of contractual relations most vividly. But essentially the same considerations are involved in contracts where property rights rather than human services are the objects of agreement. Where what is transferred is complete ownership, as in the sale of consumer goods or land or capital goods, problems of loyalty are residual. But contracts of investment and the various types of leases involve such considerations directly, since the holder of property claims against an organization is in a position to influence the operations of the organization, sometimes profoundly, through asserting his "rights." Clearly on the interorganization level these contractual patterns cannot be left to the discretion of the particular organization but must be institutionalized on a wider basis.

Both with respect to human services and with respect to prop-

erty, elements of compulsion may enter to limit "freedom of contract." The case where the role-incumbent is given no choice may be treated as the limiting one. For each category there are two primary types of such limiting cases. With respect to human service one type is that of ascriptive status—for example, on the medieval manor—where the obligation to work a particular plot of land was based on hereditary serfdom to the lord of the manor. On the other hand, certain organizations in the society may exercise powers of compulsion over certain categories of the population in certain contingencies; conscription for military service is a conspicuous example. In the case of property, there may be ascriptive rights and obligations as exemplified by hereditary ownership of land which was inalienable, or there may be powers which make possible the compulsory relinquishment of property, for example, the taxing power.

The ascriptive case is not of great interest in the present context because it is seldom a feature of organizations in our technical sense. Compulsory contract is, however, of great interest. Essentially it consists of the exercise of authority by an organization of higher-order jurisdiction. It is thus a special combination of the institution of contract, as the definition of the rules under which resources can be made available to organizations, and of the institution of authority, which is the second of the three basic integrative institutions.

The institutionalization of authority may be treated on the inter-organization level as cognate with decision-making as a function of the organization itself. Authority is the way in which the binding character of decisions is defined. It is an institutionalized feature of a reciprocal role relationship; there is hence always a double question. First, in what respects and how far is alter bound by ego's decisions and, second, how far and in what respects is ego bound by alter's decisions? We tend to speak of authority only when the relation is relatively one-sided, but the essential elements are present independently of this one-sidedness.

The institutionalization of authority defines, on a basis broader than that of the rules and practices of the organization itself, the ways and their limits in which any given actor, individual or collective, can in a given status in the organization bind others by his

decisions and, conversely, the ways and limits in which his action can be bound by the decision of others. Where status in the organization is on a "free" contractual basis, the right to quit is a limiting protection against exposure to authority, and conversely the exerciser of authority is limited in its use by the danger of losing the personnel whose action he seeks to control. Where, as in the military case, the right to quit is severely restricted or altogether eliminated, authority can, of course, go much further.

Although both contract and authority, as institutionalized patterns of the wider society they prescribe, are rules transcending any particular organization, they define obligations which, once entered into, are particularistic. By accepting employment in an organization, an individual accepts a loyalty to that particular organization which, of course, has important limits but which at the same time must be respected within these limits. Authority is also limited, but once in the organization one undertakes responsibilities (i.e., exercises authority) and undertakes to accept the authority of others within the limits of the legitimate range in this organization. These two institutions define the obligations specific to the role in the particular organization which come into force only so far as the incumbent accepts a relation to the organization.

In the conduct of an organization, however, there is a third class of rules or norms which govern conduct independently of any particular organization membership. They are universalistically defined for the society as a whole or for transorganizational sectors of the society's structure. A particularly basic one in our society is the complex having to do with personal freedoms; to take its extreme application, slavery is prohibited not only in that no one may coerce an individual into giving up his personal freedom, but even he himself may not, however voluntary a contractual arrangement, "sell himself" into slavery. The general rules against the use of force in human relations except under carefully regulated circumstances, against the use of outright fraud in almost any case (not, of course, including the withholding of information to which alter is not "entitled") and a variety of other cases fall here. The essential point is that the conduct of the affairs of an organization must in general conform with the norms of "good conduct" as recognized and institutionalized in the society. The most

general principle is that no one may legitimately contract to violate these norms, nor may authority be used to coerce people into their violation.

Thus from another point of view the three complexes of institutionalized rules stand in a reverse relation of hierarchical priority. The most universalistic complex just discussed sets the limits in the treatment of human beings and nonhuman resources within which the conduct of organizations must remain. The institutionalization of authority then defines more specifically how, within these limits, resources may be used within the structure of the organization, while the institution of contract defines the terms on which the resources can be made available at all.

Joseph S. Berliner

A Problem in Soviet Business Administration

The operation of Soviet enterprises has long been characterized by a tendency to lag behind production schedules at the beginning of the month, and then to speed up the rate of production at the end of the month in order to fulfill the monthly quota. This uneconomic practice of "storming" has often been censured by Soviet leaders, but they have not found a way to eliminate it. On the basis of discussions of management in Soviet newspapers and periodicals, the author ascribes the causes of "storming" to certain features of enterprise administration, each of which is fairly effective for its particular purpose, but which together generate this tendency to work in spurts. The author speculates about changes which might succeed in eliminating "storming."[1]

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SOVIET industrial organization has long been plagued by a number of nagging little problems. They have not prevented the state from achieving a considerable success in its prime objective of getting its salaried managers, the men who run the nation's businesses, to turn out impressive quantities of goods and services.

[1]The author wishes to thank Dr. Richard Axt of the National Science Foundation and Hans Heymann of the RAND Corporation for their valuable comments.

But there remain certain things which the state, with all its power, has not been able to get its managers to do. The intractable is always intriguing, and one wonders why these persistent thorns have not been eliminated.

Holders of power can rarely expect to achieve a perfect compliance with their wishes, and it is to be expected that Soviet industrial organization would have its share of defects. What is interesting, however, is the particular form they assume. Like the pathology of an organism, an examination of a characteristic defect of a system of organization may be expected to provide an insight into the nature of that system. It is with this end in view that we turn to an inquiry into one such defect in the case of the Soviet industrial enterprise.[2]

Conveniently for us, the leaders of the Soviet state deliver from time to time very candid reports on the state of the nation's industry to the governing bodies of the Communist party. These reports constitute a set of fairly comparable documents which lend themselves to an analysis of the persistent and the changing features of industrial organization over a period of time.[3] In February 1941, G. M. Malenkov delivered to the Eighteenth Party Conference a report which, as it turned out, proved to be a summing up of the state of industry at the end of the prewar period. Among the many matters which he considered important enough to call to the attention of the assembled party leaders was the following:

Now, Comrades, matters stand thus; in most of our enterprises the output of finished production is carried out unevenly, in spurts, and is concentrated as a rule at the end of the month. Enterprises lack a firm, previously worked-out schedule of production.

Here are some typical examples.

The Kolomensk Machinery Works in Moscow County worked this way in 1940: in the first ten days of every month it produced 5 to 7 per

[2]The Soviet industrial enterprise may be thought of roughly as mill or factory under the management of a director and his administrative staff. The director is primarily responsible to a minister or one of his assistants. The minister is part of the executive arm of the state. The broad decisions as to what is to be produced are made by the state and transmitted to the enterprises through the ministries.

[3]The three reports referred to may be found in *Izvestiia*, Feb. 16, 1941, pp. 1–3 (the Malenkov 1941 report); Leo Gruliow, ed., *Current Soviet Policies* (New York, 1953), pp. 106–116 (the Malenkov 1952 report); *Current Digest of the Soviet Press*, 7 (Aug. 24, 1955), 3–20 (the Bulganin 1955 report).

cent of its output, in the second ten days, 10 to 15 per cent, and in the third ten days, 75 to 80 per cent.

The Karl Marx-Leningrad Plant, in December 1940, produced 2 per cent of its monthly output in the first ten days, 8 per cent in the second ten days, and 90 per cent in the third ten days.

In the Moscow Pump and Compressor Plant, in December 1940, 3.4 per cent of the month's output was produced in the first ten days, 27.5 per cent in the second ten days, and 69.1 per cent in the third ten days.

We must put an end to this lack of planning, to this uneven rate of production, to this storming in the work of enterprises. We must achieve a day-by-day fulfillment of the production program according to a previously worked-out schedule, by every factory, mill, mine, and railroad.

In October 1952, at what proved to be the last party congress of the Stalin era, Malenkov was again accorded the honor of delivering the official report. Eleven years of war and reconstruction had elapsed, during which time the preceding generation of industrial managers must have been largely replaced by a new generation. But again, surveying the broad canvas of Soviet industrial achievements and problems, he lashed out against the same old problem. "The Party has more than once drawn our industrial executives' attention to this defect," he said. "Nevertheless many enterprises continue to work in spurts, producing almost half the month's program during the final ten days of the month."

A few months later Stalin died, an uncomfortable collegial form of government emerged, industrial ministries were suddenly combined into a very small number and subsequently decentralized once more, Malenkov fell from the peak of power, and on the next occasion that a major report on the economy was made, it was delivered by Premier N. A. Bulganin. In preparing this first great pronouncement of the new regime on the subject of industrial organization, before a plenary session of the Central Committee of the party in July 1955, Bulganin chose to call attention to the same matter:

A very serious shortcoming in the work of our industry is the lack of rhythm in production, and the resulting uneven output of industrial production.

Here are three factories. . . . The average fulfillment of the monthly plan at these factories by ten-day periods during the first quarter of

1955 is as follows: first ten days—Russian Diesel, 5 per cent; Spirit of the Revolution, 3 per cent; Kolomna plant, 6 per cent. Second ten days—Russian Diesel, 23 per cent; Spirit of the Revolution, 26.6 per cent; Kolomna plant, 23.3 per cent. Third ten days—Russian Diesel, 72 per cent; Spirit of the Revolution, 70.4 per cent; Kolomna plant, 70.7 per cent. How can one talk of rhythm in the work of these plants when nearly three quarters of the month's work is being carried out in the third ten days?...

Much has already been written and said about the lack of rhythm in work, and decisions have been made. However, it must be admitted that we have been unable to achieve any substantial improvement in this matter.

This practice of "storming" leads to a number of uneconomic consequences. States of emergency constantly arise; men and equipment are subject to periods of unnecessary idleness; during the days of storming the rate of spoilage increases, overtime pay mounts up, the machines suffer from speed-up, and customers' production schedules are interrupted. It is certainly a practice which the state would wish to eliminate if it could. Yet storming does not occupy a top position on the list of problems facing the state. If it did, perhaps the leaders would have been willing to take the measures necessary to eliminate it. It has not been the object of a major "campaign," the technique whereby the state attacks a bothersome problem by mobilizing all its propaganda and police resources and focusing them upon that problem. For this very reason, the practice of storming serves our purpose best by providing a case study of a normal problem in the administration of economic activity.

In examining the reports cited above, one is struck by the absence of an explanation of the causes of storming. Only Bulganin offered a feeble sort of explanation. "The principal cause," he said, "is lack of order in the supplying of materials and equipment to industry.... Customers usually are sent the major part of their requirements during the second half of the month, and especially during the last ten days." Now this indeed does explain why the customer has to speed up his rate of production at the end of the month, but it does not explain why the supplier failed in the first place to deliver the required materials in the early part of the month, that is, why the supplier engaged in storming. In effect,

storming in one enterprise is caused by storming in another enterprise. This does explain how storming is propagated through the system once it is caused somewhere, but it obviously does not explain why it is caused.

The explanation must be cast in terms of the objectives of enterprise managers and the conditions of the economic milieu within which these objectives must be achieved. The prime obligation of managers is the fulfillment of the monthly output plan. The plan is the document in which the state translates its broad economic objectives into specific production instructions for each of the many thousands of enterprises which make up the industrial system. At the highest level, the National Economic Plan is a listing of the annual production targets for the whole economy, with supplementary targets of investment, increases in labor productivity, reduction of production costs, and so on. On the basis of the National Economic Plan, each of the industrial ministries receives its set of annual targets, subdivided into quarters of the year. The ministries' quarterly targets are then translated into monthly targets for each of their enterprises, which carry out the actual production work.

If the economic objectives of the state are to be achieved, enterprises must meet their production targets in the proper quantities and at the proper times. For this reason, the whole system of incentives which the state has fashioned for the purpose of recruiting high-quality people into managerial positions and motivating them to do their jobs well is geared to fulfillment of the monthly plan, particularly the production target of the plan. First and most immediate is the ample money bonus. Depending upon the importance of the industry and the size of his enterprise, the manager earns a bonus of 30 to 100 per cent of his base salary every month in which he just fulfills his plan.[4] For each percentage overfulfillment of his plan he earns an additional bonus of 2 to 10 per cent of his base salary. The opportunities of adding to an already substantial base salary are thus quite appealing. The director of a coal

[4]A. Vikent'ev, *Ocherki razvitiia sovetskoi ekonomiki v chetvertoi piatiletke* ("Essays on Soviet Economic Development in the Fourth Five Year Plan") (Gosplanizdat, 1952), p. 175.

mine, for example, whose base salary may be about 10,000 rubles a month, would earn a total of 25,000 rubles in any month in which he overfulfilled his plan by 5 per cent.

One need not be a *homo economicus* to be profoundly motivated by such income possibilities. Moreover, the state has seen to it that this money incentive is not in conflict with, but is rather reinforced by, other incentives which may motivate a Soviet manager. Personal advancement, public recognition, and all the prestige which the state can officially confer or channel are available to the manager who regularly fulfills his plans. Demotion is the usual lot of a manager who proves incapable of meeting production targets.

The point is that the state has quite successfully met the problem of eliciting a high level of managerial effort. Soviet managers work hard, not only in terms of their hours of work but in the energy and worry they devote to their jobs. And the focus of their efforts is the fulfillment of the monthly plan.

But fulfilling the monthly plan is no easy matter, and this is the second point to be made. The state has succeeded in organizing a system of establishing plan targets which is calculated to maintain the targets at a high level. Among the various devices developed to achieve this aim is one based on the "ratchet" principle. According to this principle, when an enterprise overfulfills a plan target, the plan target for the following period must be raised. That is, if an enterprise overfulfills its plan of a million rubles' worth of output in one period, the plan for the following period must be greater than a million.[5] In combination with a powerful motivation for managers to overfulfill their plans, the ratchet principle provides an ever-rising floor beneath which output plans cannot fall. The abundant bonuses induce managers to overfulfill their plans, the ratchet snaps the catch, as it were, beneath the new level of output achieved, and the manager must then exert even greater effort to

[5]The ratchet principle is not an explicit principle of planning but a generally understood rule among managers and planners. In the published sources one catches glimpses of it in the criticism of planners who apply it overzealously (*Stroitel'naia gazeta*, July 27, 1955, p. 2), and in criticisms such as that by Malenkov in his 1941 report, directed against "commissariats which not only did not fulfill their 1940 plans but actually reduced their output below 1939." Usually the ratchet principle operates over yearly periods, occasionally over quarterly periods.

overfulfill the raised target. This would seem to be a very efficient mechanism for securing the state's objective of an ever-increasing rate of output.

What we have just described is, to be sure, an abstract model of a real process. In fact, managers have been forced to adopt certain methods of defense against the working of this mechanism. Awareness of the action of the ratchet principle causes the prudent manager to beware of overfulfilling his plan by too large an amount, a practice which is contrary to the intentions of the state. Similarly, managers take pains to preserve a "safety factor" in their production targets, so that they can overfulfill their plans and yet not exhaust their real production potential.[6] But, in general, the effect of the mechanism is to maintain plan targets at a level high enough that the margin of fulfillment is perilously close for most enterprises. This pressure of high targets is perhaps the most salient fact of life for the Soviet manager. Bulganin presented some dramatic evidence of this in his criticism of the high rate of underfulfillment of plans. In 1951, 31 per cent of all enterprises failed to fulfill their annual production plans; in 1952, 39 per cent; in 1953, 40 per cent; and in 1954, 36 per cent. Thus a third of all managers can regularly be expected to underfulfill their plans.

One consequence of this close margin of operation is suggested by another observation made by Bulganin. "The executives of many enterprises change much too often. In the coal industry, for example, about 40 per cent of the heads and chief engineers of the mines and some 50 per cent of the sector managers change every year." When a Soviet manager leaves his job, it is not of his own volition.

The picture which emerges is that of a system in which managers work in a rather precarious position. The difference between the successful and the lagging enterprise is not primarily that the former has an easier time of it, but that its managers are more resourceful in overcoming difficulties. Take the Cheliabinsk Tractor Plant, a great and modern establishment which fulfills its plan month after month. Here at least, one might guess, is a smoothly functioning operation. Yet when the Soviet press gives us a glimpse

[6]Joseph S. Berliner, Informal Organization of the Soviet Firm, *Quarterly Journal of Economics*, 66 (Aug. 1952), 353–355.

of its day-to-day life, we find another picture. Although the plant fulfilled its plan for the first half of 1955, it had to engage regularly in storming in order to do so. Workers are pressured by management into working on their days off and those who refuse are declared to be "absentees." One woman worker was dismissed for refusing to work on Sundays and was reinstated only after the intervention of the trade union. In September, we read, things began to look bad once more toward the end of the month; the director therefore switched the day off from Sunday, September 25, to Saturday, October 1. "It was possible," declares the reporter of the incident, "with the help of this extra day, to make do, and to make do quite well."[7] The monthly plan was fulfilled once more and the plant is still numbered among the successful.

With this slim margin of safety, any untoward accident can plunge the enterprise into underfulfillment. The breakdown of a crucial piece of equipment, the rejection of a large lot of production, can throw the enterprise off its production schedule. Even if the manager could meet his target as far as his own efforts are concerned, there is the additional source of trouble referred to by Bulganin, namely that the supplier may fall behind his schedule and thus fail to deliver urgently needed materials on time. Indeed, the unreliability of the system of interenterprise supply is perhaps the second most important fact of life in Soviet industry. The economic milieu is therefore such that the manager must often expect to fall behind his production schedule in the course of some month or other.

Given the likelihood of a lag behind the production schedule in some months, what causes the recourse to storming? One might imagine that the lost output would be considered just so much water under the dam: the manager might resume his production schedule when the machine was repaired or the materials arrived, and the month's bonus would be written off as lost. That this does not happen is due to the very special role of the accounting period, the end of the month. Ordinarily, an accounting period is a rather arbitrary date selected for the convenience of planning or for taking stock of performance. Ideally, it should be quite neutral with respect to decision-making; that is, managers should make the

[7] *Current Digest of the Soviet Press*, 7 (Nov. 9, 1955), 9.

same decisions when the accounting date is known as they would make if they did not know on what date the books would be closed. Least of all should the accounting date itself be treated as a datum in the decision-making process. But this is precisely what happens in the Soviet enterprise, and it is this which explains the practice of storming.

This tendency for an arbitrary accounting date to become a factor in decision-making is not unique for Soviet business administration; the effect of tax law on the financial policies of American business leaps to mind. Because of the crucial role of time periods in planning, it is perhaps more serious in the Soviet economy. A vivid illustration of its unfortunate consequences was provided a few years ago by N. S. Khrushchev, in a report on agriculture.[8] For many years it had been the practice to take the livestock census on January 1. It would seem that January 1 is a rather harmless date; presumably it was selected by an innocent planner with the primary objective of facilitating planning schedules. However, the collective farms have targets of livestock holdings which they are required to meet, as well as targets of meat deliveries to the state. Ordinarily the peasants would bring their stock for slaughter in the early fall, when they are fattest from the summer grazing. But in order to meet their livestock targets on January 1, they kept their stock through the cold early winter months so that they could be counted in the census. The consequence was a disastrous loss of weight; and when they finally brought their stock for slaughter after the census date, they had to slaughter many more head of stock than planned in order to fulfill the quota of meat deliveries in kilograms of beef on the hoof. This had been going on for a number of years before it came to the attention of Khrushchev. The census date has since been moved back to October 1, and the simple shift of dates has probably solved this curious problem.

Thus an arbitrary accounting date had become a factor in the decision-making process, with the most uneconomic consequences. This is precisely what happens in the case of storming. Because of the crucial importance of the end of the month for the fortunes of the manager, any lag in the production schedule is followed by an acceleration in the rate of production in order that the planned

[8] *Pravda*, Sept. 15, 1953, p. 2.

output be attained on that vital date. The greater the lag in the early part of the month, the greater the speed-up toward the end of the month. Given this special role of the accounting period, storming is to be expected as long as lags in production are a normal occurrence.

If storming were confined to the months in which lags occurred, its prevalence would be much more limited than it is. It would be much less troublesome to the Soviets and much less interesting to us. For the remarkable thing is that at the end of the month of storming the manager is not presented with a *tabula rasa,* so that in the following month, if no lag occurred, he might hope to avoid storming. The very act of storming creates conditions which make a lag in the following month inevitable. Of the many reasons why this occurs, we can present only the most important.

A proper schedule of prophylactic maintenance and repair of equipment requires that a certain number of machines be out of operation at all times. But a machine taken down for repair is a machine which is not producing, and thus there is a constant pressure on the maintenance personnel to postpone their work until the pressure is off. "In the third ten-day period of January," we read in the newspaper of the machinery industry, "machine 'TM-132' was supposed to have been overhauled, but in the shop they decided to wait; 'the production program has to be fulfilled,' they said. Soon, however, the machine broke down completely."[9] And a correspondent of the newspaper of the iron and steel industry observes that "storming leads to the fact that at the end of the month the equipment is not stopped for maintenance. All stoppages for maintenance are postponed until the beginning of the next month."[10] The consequence is that the first part of the month following a period of storming is devoted to catching up on the most vital delayed maintenance work and to repairing the damage caused by overwork. Hence the enterprise falls once more behind its current production schedule.

In the discussion of bonuses it was pointed out that the difference between 99 per cent of the plan fulfillment and 100 per cent may be worth as much as double his salary for the plant manager.

[9] *Mashinostroenie,* Feb. 9, 1939, p. 2.
[10] *Chernaia Metallurgiia,* March 4, 1941, p. 3.

This sharp discontinuity in earning power is not exactly calculated to bring out the noblest of qualities in a man. When so much hangs upon that one per cent, it is quite understandable that the manager will stretch a point in order to achieve it. The commonest practice is the "borrowing" of output from the next month and reporting it as having been produced in the current month. The Molotov Weaving and Finishing Mill, for example, was considerably short of its monthly target on August 31. "What was most important," states the reporter of the incident, "there was no chance for a bonus." The manager called in his accountants, "giving them strict orders to include the output of the first two days of September in the August plan, and, of course, to draw up appropriate 'records' for this purpose."[11] Since the borrowed output must be "repaid," the early period of the following month is devoted to producing output which had been reported as completed in the preceding month. Hence the enterprise falls behind its current schedule once more. "It is like a tight shirt which comes out in front when you pull it down in back," remarked a former Soviet managerial official interviewed by the writer.

The available descriptions of the storming process indicate that a great deal of energy is expended, while the men work long overtime hours and the managerial officials work "round the clock." It is to be expected that when the deadline is over, there will be a letdown—if not in hours, at least in energy expended.[12]

Factors such as these impart a dynamic movement to the output of the Soviet firm, a movement which has all the formal properties of a "business cycle." Consider an enterprise which has managed to achieve an even rate of output. Any disturbance to its schedule will now generate a periodic movement in its rate of output, not only in the month in which the disturbance occurs but in a number of successive months. The oscillations will dampen down if

[11] *Current Digest of the Soviet Press*, 4 (Jan. 3, 1953), 16.

[12] To this may perhaps be added the survivals of peasant resistance to the harsh and demanding discipline of industrial factory life. There is a very suggestive passage in Marx's *Capital* describing the early capitalists' troubles in disciplining their recently urbanized labor force to the factory regime: "Work toward the end of the week being generally much increased in duration in consequence of the habit of the men of idling on Monday and occasionally during a part or whole of Tuesday also. . . . They lose two or three days, and then work all night to make it up" (Karl Marx, *Capital* [Modern Library], p. 523 n.).

the enterprise has succeeded in tucking away a "safety factor"; that is, if in any month the output plan is small enough that it can be fulfilled with enough time and resources left over to make up for the output deficit of the preceding month. The oscillations will become wider if the initial disturbance is reinforced in succeeding months so that the enterprise falls further and further behind its schedule. This usually ends, as the Russians say, in a great *skandal*. The manager is fired and a new hopeful takes over.

Here, then, is a nice problem for the administrator. Three integral elements of the system of industrial organization are involved; a powerful incentive to produce, a successful technique of maintaining high targets, and a system of planning and accounting. Each in its way is a useful device for what it is designed to accomplish. Yet in combination they give rise to this unfortunate and unintended practice of storming. It is interesting to speculate on changes that might succeed in eliminating the practice. Let us at the outset limit the admissible changes to simple measures which would not require far-reaching alterations in the basic features of the system of industrial organization, such as the planning and incentive systems.

In the three party reports quoted earlier, the only real administrative measure recommended was one put forth by Malenkov in the 1941 report. Certain commissariats,[13] he indicated, had introduced a system requiring every director to report daily to the commissar on the quantity of output produced the preceding day. "These reports oblige the commissar to find the causes of the failure to fulfill the daily targets immediately, and to take immediate measures for correcting the indicated deficiencies." Where the system had been introduced, stated Malenkov, there had been a significant evening-out of the rate of production.

Whatever hopes Malenkov may have had that this measure would provide the panacea must have been short-lived, for little was heard of it thereafter. At least one reason for the failure began to emerge shortly afterward. As a measure of self-defense, managers began to resort to the practice of "prolonging the work day." In an iron and steel plant, we read, "by order of Comrade Matevosian, the chief engineer, it was decided to prolong the acceptance

[13]In the prewar period, ministers were known as "peoples' commissars."

of finished products from the rolling mill on March 15 until 1:30 A.M. of March 16. On March 11 Comrade Matevosian authorized the inclusion in the output of the current day, of the output of the quality steel shops which had actually been completed by 6:00 A.M. of the following day."[14] In other words, the period of the storming cycle was reduced from the month to the day, but the same elements of periodicity continued to prevail. Any measure to eliminate storming must reckon with the boundless ingenuity of Soviet managers.

There were undoubtedly other reasons for the failure of Malenkov's measure. A system of daily reporting must have greatly increased the work load on the normally overlarge number of bookkeepers and clerks in the plant administration. The system also required a more formalized set of daily plan targets, a further burden on the planning apparatus in the commissariat and in its hundreds of enterprises. And finally, when the lag in production was due to causes outside the enterprise's own control, such as the failure of materials shipments to arrive on time, the commissariat officials could not be expected to straighten matters out in a single day.

Would it help to lengthen the accounting period, perhaps to a three-month or six-month period instead of a one-month period?[15] This measure comes very close to violating the restriction we have set upon the range of admissible solutions, for it may well require far-reaching changes in the methods of plant administration. The system of bonus payments would have to be shifted to a longer time period. If the bonus for fulfillment of the six-month plan is to be equal to six times the bonus previously available for the monthly plan, the stakes on that last few per cent of plan fulfillment would be so high as to constitute an intolerable strain on the honesty of mortal men. Moreover, the whole system of planning and reporting is geared to a monthly basis, and if the bonus system were not similarly geared there would undoubtedly be an increase in the incidence of underfulfillment of monthly plans. For however harshly storming is indicted, the state is really rather ambivalent about it. Because of the planned interdependence of

[14] *Chernaia Metallurgiia*, March 22, 1941, p. 2.

[15] The author is indebted to Professor Raymond T. Bye of the Wharton School of Finance and Commerce, University of Pennsylvania, for this suggestion.

customers and suppliers, underfulfillment by one enterprise often sends a wave of underfulfillment pulsing through a number of other plants. It is therefore vitally important that each manager exert the greatest effort to fulfill his monthly plan. One suspects that the state would rather have storming-plus-fulfillment than underfulfillment-without-storming. It is true that this problem of the close interdependence of enterprises could be met by an increase in inventories and pipeline stocks, but here too is a measure which would alter the basic principles upon which Soviet industry has functioned in the past.

It is doubtful that an admissible solution could be found by the manipulation of the accounting period. It is true that this approach worked in the case of the livestock census date, but there it was merely a matter of tying the accounting period to a certain natural phenomenon which was not one of the variables of the problem but a datum.

Could a solution be found by focusing on another facet of the problem, the incentive system rather than the accounting period? When really serious problems have arisen, the Soviets have often appealed to what they clearly recognize as a major motivating factor, the bonus. Thus in recent years the award of bonuses has been made contingent upon fulfillment of a cost-reduction target and upon the production of the proper quantities of individual items of production (the assortment plan). Judging from the continued complaints about the neglect of costs and product-assortment, this method has not proved outstandingly successful, probably because the state's prime interest in production remains overriding. If the award of bonuses were made to depend on the fulfillment of too many unrealistic side conditions, fewer bonuses would actually be earned, and there is a danger that this potent incentive would be vitiated. If the state introduced and enforced a requirement that no bonus be paid if the plan were fulfilled by storming, most managers would have to write off the bonus as a paper promise.

An alternative solution along these lines would be to offer to the manager who eliminates storming a supplementary bonus which would be independent of the bonus for plan fulfillment. This too is an approach which has been used in the past to motivate man-

agers to put more effort into increasing the production of spare parts and the production of a side line of consumer goods out of scraps and waste. The trouble is that too many supplementary bonuses tend to deflect managerial attention in the direction of the largest bonus. The commissariat of the Iron and Steel Industry, for example, once introduced a system in which managers could earn a bonus of 50 per cent of the value of fuel saved and 15 per cent of the value of materials saved.[16] The system may well have turned a good deal of effort away from materials to fuel. And when there are possibilities of substitution (perhaps by producing more consumer goods at the expense of spare parts), quite unintended decisions may be made. Thus a supplementary bonus for elimination of storming, which would be large enough to make a difference, might raise new problems in other spheres of managerial activity. In any case, the bonus must not be larger than the bonus for production plan fulfillment, and therefore it would not be likely to eliminate the causes of storming.

We cannot continue here to explore the full range of possible solutions. But enough has been said to demonstrate that storming is so deeply ingrained in the structure of the system that no simple measures can eliminate it. The argument may be concluded by considering that there is no lack of solutions if we are willing to admit fundamental changes in the system of industrial administration. Suppose, for example, that production plans were reduced well below their present high level, perhaps by eliminating the "ratchet" principle of planning. If there were enough slack in production plans, ordinary lags in production schedules could be easily made up without recourse to storming. Plans would be more often fulfilled, and there would be no need for the postponement of maintenance and the "borrowing" of output. If plans were more often fulfilled, enterprises would less often be thrown off schedule by the delayed delivery of materials from suppliers. A general reduction of plan targets would thus eliminate two of the three components of the storming mechanism: the high probability of lags behind schedule and the dynamic transmission of storming from one period to the next.

[16] *Industriia*, Jan. 22, 1940, p. 3.

It is doubtful that the Soviets will accept this gratuitous suggestion and, it must be admitted, possibly with good reason. The combination of high targets and high rewards is a most effective mechanism for eliciting a high level of effort from their managers. Lower targets might very well lead to a relaxation of effort and output, which is contrary to the objectives of the state. Storming is a price which the state probably considers well worth paying for the benefits of the present system. For the administrator, it remains an embarrassing defect which his art is powerless to eliminate. "What we need if we are to solve this," said Bulganin, "is not exorcisms but elimination of the causes which breed lack of rhythm." But it is doubtful that we shall hear anything but exorcisms unless broader changes in the administrative system are admitted.

James D. Thompson

On Building an Administrative Science

The unique contribution of science lies in its combination of deductive and inductive methods for the development of reliable knowledge. The methodological problems of the basic sciences are shared by the applied fields. Administrative science will demand a focus on relationships, the use of abstract concepts, and the development of operational definitions. Applied sciences have the further need for criteria of measurement and evaluation. Present abstract concepts of administrative processes must be operationalized and new ones developed or borrowed from the basic social sciences. Available knowledge in scattered sources needs to be assembled and analyzed. Research must go beyond description and must be reflected against theory. It must study the obvious as well as the unknown. The pressure for immediately applicable results must be reduced.

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THE issue of science versus art for administration seems to be vanishing with the realization that one approach does not rule out the other. The art of the surgeon, to take a parallel case, is supported by the medical sciences; the art of the engineer by the physical sciences. It is widely recognized that there is an element

[1]The author is indebted to William J. McEwen of the same faculty for helpful comments.

of art in administration; the possibility of a science of administration is only now coming to be taken seriously. Nevertheless, the sole assumption required for the application of scientific methods to the subject of administration is now generally accepted. That assumption—that regularities can be identified in the phenomena under consideration—is the basis of every attempt to train people for administrative roles.

If every administrative action, and every outcome of such action, is entirely unique, then there can be no transferable knowledge or understanding of administration. If, on the other hand, knowledge of at least some aspects of administrative processes is transferable, then those methods which have proved most useful in gaining reliable knowledge in other areas would also seem to be appropriate for adding to our knowledge of administration.

It is no longer a ridiculous idea that regularities can be found in human behavior. Previous impressions to that effect stemmed more from inability to perceive regularities than from their absence. Those who assert that human behavior cannot be studied scientifically often speak of such regularities as staff-and-line conflict. There is now every reason to believe that an administrative science can be built, although the building will not be easy.

An administrative science will be an applied science, standing approximately in relation to the basic social sciences as engineering stands with respect to the physical sciences, or as medicine to the biological.[2] There is an element of art in the practice of medicine and engineering, but in both instances the development of supporting sciences has reduced the element of luck or chance by providing tested bases for judgment. The less gifted practitioners of medicine and engineering are more effective than their counterparts a generation ago precisely because there is a greater store of scientific knowledge for them to draw upon. For the same reason the more creative physicians and engineers are able to accomplish things which their creative forerunners would consider miracles. The dividing line between "art" and "science" is not a fixed one but is constantly changing. The art of the engineer, the physician

[2]This is, of course, an oversimplification. Medical practitioners, for example, have incorporated knowledge from the physical as well as from the biological sciences, and more recently, they have paid increasing attention to the social sciences.

or surgeon, or the administrator, gradually improves, that is, it becomes more effective in terms of his aim, as the sciences behind him find new relationships and explore their ramifications.

If the term "science" is not merely a synonym for "knowledge," the distinction lies in the methods by which scientific knowledge is amassed. The distinguishing contribution of the sciences seems to lie not in measurement, not in quantification or statistics, not even in laboratory experimentation, but in the combination of both deductive and inductive techniques for the development of logical, abstract, tested systems of thought. Achievements in the physical and biological sciences, and in their sister applied sciences, have demonstrated most convincingly the practical value of theory —theory which is repeatedly tested against experience and modified accordingly. A science of administration will be distinguished from administrative lore by the methods used to build that knowledge of administration.

The methodological problems found in the basic sciences are shared by the applied fields. Several schools of thought are embraced by the discipline known as philosophy of science, and it would be presumptuous here to try to describe completely the methods of science. But several characteristics of the methods of science are well established and carry implications for the direction of effort for students of administration.

The major achievement of science—the successful blending of inductive and deductive, or theoretical and empirical approaches—is accomplished under the following minimum set of circumstances:

First, a *focus on relationships.* While description and measurement are basic techniques in science, their importance lies in obtaining greater precision in the statement of relationships among phenomena under stated conditions. The biologist views an organism as a system or a set of related and interdependent parts, and the astronomer understands the solar system as a set of celestial bodies in relationship to one another. Scientific theories are simplified models of relationships, which appear to account for experience.

A second important characteristic of the scientific approach is *the use of abstract concepts.* Science involves deliberate attempts to simplify understanding of relationships through use of abstract

concepts which permit generalization. An important indication of success in science is the number and range of "concrete" events which one set of concepts can "explain." Moving away from the concreteness of specific cases permits discovery of relationships which hold in numerous cases and is thus an important step in generalizing. This was a major advantage of Einstein's famous formula, $E = mc^2$. The scientific method requires the discarding of concepts limited to particular geographical areas or particular times and their replacement by others.

The development of operational definitions is another major characteristic of the scientific approach. If concepts are not to remain sterile or forever debatable, they must be bridged to "raw experience." Science requires that concepts be defined by a series of operations which permit the sensory perception and identification of the phenomena referred to by those concepts. Operational definitions make possible independent repetition of observations by scientists in many places and at many times.

How does the field of administration measure up against these requirements?

Much of our literature is lore, spelling out how a procedure or technique is carried out in current practice or proclaiming that "this is the way" to do it. This material contains rather bold and often implicit assumptions about the relationships between the procedure or technique under consideration and other things which take place within the organization. This type of literature frequently asserts that a certain device is proper, i.e., gets desired results, on the grounds that "General Motors has it" or that the one hundred "best-managed" companies use it. But a particular budgeting procedure, for example, may be appropriate for General Motors and not for Company X, and it may be appropriate for General Motors in 1956 but less appropriate in 1960. Any particular item, that is, may show a high correlation with "success" when imbedded in one context but show a low correlation in a different context. A particular budgeting procedure thus may be effective when accompanied by a particular communication system, a particular style of leadership, a particular structure of authority and responsibility, and so on. It is the configuration of these items—the relationships between them—which produces a desirable result.

With respect to concepts, the literature of administration ranges from the very abstract to the extremely concrete, but seldom are the two related. Despite the many discussions, for example, of the works of Chester Barnard, Henri Fayol, Mary Parker Follet, Herbert Simon, Lyndall Urwick, and others, their concepts and propositions have been little tested in research. On the other hand, much research into administrative problems has been organized around *ad hoc* hypotheses with little attention being given the place, if any, of these concepts in more general theory. Many of our concepts are appropriate to one cultural setting but not to others, to one type of administrative enterprise but not to others, to one hierarchical level but not to others.

Scientific talents, like administrative talents, are scarce; there are great economies to be gained through the use of concepts which can be applied to administration wherever administration occurs. The development of an administrative science will be hobbled until we find concepts applicable to a variety of administrative levels so that, for example, scientific knowledge of phenomena at supervisory levels can feed into understanding of events at higher levels, and vice versa, or until we develop concepts which will permit confirmation in, say, the hospital setting, of relationships observed in a business or military organization.

Concepts appropriate for these purposes must be rather abstract, although they may well be accompanied by less abstract concepts which serve as a bridge to concrete "reality" in specific settings. For example, a focus on profit as a major objective of the administrator immediately separates profit-making organizations from other types, unless at the same time we move upward in abstraction —perhaps to think of the administrator as employing resources in pursuit of objectives, with profit as a specific manifestation of objectives in one type of organization, and with healed patients as a specific type of objective in another type of organization.

The more abstract scheme permits the simultaneous gathering, in many kinds of organizations, of data about the use of resources in the pursuit of objectives. It therefore encompasses a much larger number of people who may make valuable contributions.

Because administrative research has been relatively divorced from administrative theory, few of our abstract concepts have been

operationalized, while those concepts which have been used in research seldom permit generalization. Empirical observations are thus difficult to reflect against theoretical systems, and we are not able to design research projects out of those systems. Administrative science cannot progress very far until we have convertibility of "symbolic currency."

The above are some of the problems which face any science, basic or applied. But in the applied fields one problem stands out as particularly important and universally bothersome. This is the question of criteria or indexes for objective measurement and for selection of alternatives.[3] How are we to determine the effects of a particular relationship among a set of variables? Moreover, how are we to determine that one relationship yields a more "desirable" net effect than another relationship?

In their purest forms, the basic sciences can be as well served by a negative finding as by a positive one. Their models or theories approach neutrality, and all findings are welcomed. But the models of the applied sciences, implicitly or by design, are focused on achievement, utility, or service values. The medical sciences, for example, focus on preserving the human organism and maintaining its "proper" functioning. The engineering sciences have other pragmatic values for application. Because the values employed in those fields are also so widely held by others in our society, we tend to forget that they are value criteria. But the issue is pointed up in medicine occasionally by, for example, the question of "mercy deaths"; the engineer runs into a similar issue when he attempts to apply his science in areas where religious or other values are held in higher esteem than are the pragmatic values of engineering.

The basic scientist may open a new direction for research and theory if he finds that a certain relationship between *A* and *B* leads to *C*. The same discovery may also open up a new area for the applied scientist—but not necessarily the same area. For application it is not enough to know that *A* and *B*, in a specific relationship, lead to *C*. We must determine, in addition, two things:

[3]Distinctions between basic and applied sciences are distinctions of degree rather than kind, and this discussion necessarily is oversimplified. The problems found in one area of science appear also in other areas of science, but the emphases may be different.

(1) What *else* does this relationship between *A* and *B* bring about? It is not enough to know that penicillin fights bacteria in the human organism, for in some organisms the introduction of penicillin may also have harmful aftereffects. The same sales or profit targets may be achieved under either a "divisional" or "functional" type of organization, but one may have higher "costs" in the long run through, for example, higher labor turnover. An executive incentive system may bring about increased effort, but this may also glue executives' attention to the short run at the expense of next year's operations.

(2) What else leads to *C*? The *AB* relationship brings about *C* at some "costs," and there may be other ways of arriving at *C* with less expense. Until the array of alternative means and their "costs" is known, selection from among possibilities is difficult.

The criterion problem is a tough one for any applied science, for the relationships involved in "real life" usually are quite complex and are not subject to the same high degree of control which can be maintained in the laboratory. The laboratory scientist, and the abstract theory builder, can work with "other things being equal." But when a vaccine, for example, is taken out of the laboratory and used on human beings who have had virus as well as those who have not, on children who have runny noses and those who have not, on some who are anemic or have already been exposed to a disease, and so on—here the applied scientist is not as certain as he was in the laboratory. He no longer has "other things equal."

Because of this complexity in our phenomena, adequate measurement is difficult. How, for example, can we learn to measure the effects—or even the major effects—of the introduction of a new organization chart, or a particular committee arrangement?

The development of criteria will be difficult, requiring considerable research time and money, but it does not appear impossible. Important contributions have been made during the last decade, particularly in research supported by the military establishment, and more will undoubtedly be forthcoming from other sources. But because of the difficulty of establishing criteria and the consequent research required, it is extremely important that theories be developed which predict the consequences of various admin-

istrative actions. Generally speaking, the more advanced the theory, the less the research effort required to determine the major relationships. This is one sense in which theory is a most practical matter.

If these observations have validity, what directions do they point to for the development of an administrative science?

Of immediate importance is the area of concepts. The abstract concepts already at hand must be operationalized where possible, or revised and then made operational. New concepts will have to be developed or they may need to be incorporated from related sciences. The basic social sciences have been wrestling with concepts for some time and have been operationally defining them. While they offer jargon they also offer concepts which promise to be highly useful in the study of administration.[4]

To the extent that useful ideas have been developed in these related fields, it would be folly to ignore them. At the same time, however, administrative science will have to develop some of its own concepts and refine those it borrows. This will not be accomplished quickly, and it will require the presence of abstract thinkers or conceptualizers, as well as research-oriented scientists. We have perhaps been more successful in developing people who *use* abstract notions (i.e., "competition brings better service, lower prices") than we have in developing people who *think* at highly abstract levels. Moreover, systems of logic for relating these abstract concepts are as urgently needed as the concepts themselves. In the physical sciences the service of mathematics for this purpose is obvious. Mathematics has not yet demonstrated equal power in the social science area, although new forms of mathematics may be developed for this purpose in the future. In any event, one or more systems of logic must be developed before administrative science can mature. How much confidence can we have in it? How far can we generalize from it? Current knowledge of administration is not sufficiently organized. This is due in part to the need to develop more comprehensive theory.

[4]The high incidence of jargon in these fields, incidentally, probably springs largely from the fact that social scientists have been wrestling with conceptual problems for some time. It would seem that this is a stage any science must go through. The biological and physical sciences have this behind them for the most part.

At the same time, we need to explore the empirical findings in the social sciences which may be pertinent and, when necessary, to translate these into administrative situations, at least hypothetically. Basic discoveries in the biological and physical sciences are incorporated at applied levels with impressive speed. Effective channels have been built for funneling new knowledge into medicine and engineering. By contrast, administration is relatively isolated from the basic social sciences.

A third major need is redirection and renewed emphasis on research. Too much of our research effort has gone into the compilation of incidents or examples which support particular points of view, and far too little effort has been directed toward testing such points of view. It is vital that we seek out those incidents or cases which do *not* fit, for this is the only sure way of finding those points at which theory needs revision.

A trend toward empirical research is encouraging, but we must not rest with pure description. Description is necessary but it is only one step in building a science. Nor is the testing of "free-floating" hypotheses an economical way to approach our problems. Testable hypotheses which will link abstract notions with empirical data are urgently needed.

The pressure for immediately applicable research results must be removed from a large part of our research. It is this pressure which, in part, leads to the formulation of common-sense hypotheses framed at low levels of abstraction, without regard for general theory. The focus of attention on results with immediate utility limits thought and perception and thereby reduces the ultimate contributions of the research to administrative science. Moreover, the search for the immediately useful often leads to the application of ideas whose unintended and unrecognized costs may be greater than their positive contributions. Research not carried out under pressure for immediate results is more likely to seek out all major consequences of an idea or practice.

Research for an administrative science must be directed at the "obvious" as well as at the "unknown." Attention tends to be caught by those items of our experience which are not usual, expected, or obvious. Those activities or procedures within administrative practices which "work perfectly well" are seldom noticed.

Yet if they are analyzed and described in abstract, theoretical terms, they may well form the backbone of a comprehensive theory which will help immensely in discovering other, currently unknown, relationships. It was through understanding of the known elements that the construction of the periodic table was possible, and this in turn permitted chemists to predict the existence of unknown elements, some of which are only now being found. An administrative science must explain the obvious as well as the rare or difficult relationships.

Surveys showing "how things are done" have their place in an administrative science, but much more needs to be done along the lines of "what happens if." All possible combinations and permutations need to be explored, and the current "best practice" must be examined *critically*. This kind of research is not easily or quickly done. An administrative science must attract talented people and provide them with resources. Sponsors with patience as well as funds must be found. The quality of patience is also of much advantage to those actively engaged in the building of an administrative science. Answers to questions of administration are more likely to come by increment than by the master stroke of one research project, and this requires a research sequence with each piece building on the knowledge gained before.

Book Reviews

The Big Business Executive—The Factors That Made Him, 1900–1950. By Mabel Newcomer. New York: Columbia University Press, 1955. 164 pp. $4.00.

Big Business Leaders in America. By W. Lloyd Warner and James C. Abegglen. New York: Harper and Brothers, 1955. 243 pp. $3.75.

The Reputation of the American Businessman. By Sigmund Diamond. Cambridge, Mass.: Harvard University Press, 1955. 209 pp. $4.00.

It has been widely noted that a new type of business leadership has been emerging in the evolving American economy, but the exact measurements of this change have not always been made clear. Now three studies, made respectively by an economist, two sociologists, and a historian, do much to present an interesting delineation of the business administrator undergoing change.

The economist, Mabel Newcomer, has drawn statistical portraits of the chief business administrators of the United States as of three definite dates—1900, 1925, and 1950. Her purpose is to determine, in the light of all of the factors influencing careers and the choice of executives, the extent of natural selection and hence the strength of American business leadership. She is interested in such matters as origins, education, career patterns, selection and retirement ages, and financial rewards. In contrast, the sociologists, W. Lloyd Warner and James C. Abegglen, are interested in the thought patterns and the private and public behavior of the executives. In particular they make much use of the two concepts of "birth elite" and "mobile elite"—those born to high status in the business world as compared with those who have successfully moved from low to high station. The authors are concerned with the apparent influence of position and career on personality, adaptability, public

activities, marital relations, private lives, and, above all, with the degree to which the patterns of executive behavior and selection fulfill the popular conception of the "American dream." Upon this depends in large measure the social and political strength of American business leadership. Sigmund Diamond throws further light on the changing nature of the executive by analyzing the public commentaries, both favorable and unfavorable, which appeared on the deaths of six outstanding business leaders, from Stephen Girard to Henry Ford. He is seeking not so much biographical information on these persons as information regarding the American dream itself. In other words, how may entrepreneurial conduct have been influenced by changing concepts of those most difficult of all prizes to win—enduring fame and public esteem?

Newcomer bases her study of the growing professionalization of management on substantial samples—284, 319, and 863 officers for the years 1900, 1925, and 1950, respectively. Her work is limited to chairmen and presidents only of the largest railroad, utility, and industrial corporations in terms of assets. For each of these officers, a questionnaire was completed either by the subject or through biographical research.

The 1950 statistical portrait is especially interesting. The top officer of this year is typically a native American, the son of a small businessman. He went through college partly with the aid of funds secured from his parents, and partly with money from part-time earnings. Upon graduation, he secured employment himself, without family assistance. While still quite young he entered the employment of the firm which he later came to head. His career consisted of working up through various positions in a department of the firm until he achieved a vice-presidency. Achievement in a specialized area was prerequisite to generalized leadership. At some time he had taken some professional training, but had never practiced independently. He was chosen president at age fifty-two, is now sixty-one, and will retire at seventy. He has had little experience outside his own firm. His ownership of 0.1 per cent of the firm's stock is insignificant in terms of controlling the firm.

The contrast with the 1900 group is striking. Many of the corporations were then so new as to be in the hands of the founding generation. Over one half of the leaders had achieved their positions by being promoters themselves or by acting as appointees of promoters or investment bankers. Over two thirds had been independent businessmen before taking on high executive position. Formal education was much less common. Since corporations often were still dominated by general

entrepreneurs not primarily concerned with corporate office, the power and status of the officers was much less than it is today. Inbreeding, now a common feature, was then rather rare. In short, today's corporate officers are a very different type than formerly.

The keynote of this book is the strong evidence of professionalization in top management today, as indicated by five clear trends. First, higher education is rapidly becoming a requirement of business success, but it is also becoming more generally available, and the proportion of leaders with advanced or professional degrees is rising. Second, an ever-increasing proportion of top leadership is being chosen because of demonstrated capacity rather than because of the influence of family or of financial control. Since Newcomer finds that over 66 per cent of the 1950 sample "arrived" in this way, it would seem that we are developing a leadership of ability rather than of birth. Third, there is evidence of the emergence of a code of ethics governing the business and public acts of the leadership—a code which Diamond's work does much to explain. The fourth trend is the emergence of a clearly defined internal ladder involving such factors as selection, careful training, and rational evaluation, in place of the earlier career patterns based on promotional and speculative activities. Finally, at the top levels, policy-making has come increasingly into the hands of boards in which professional managers dominate, the survival of the institution is an important objective, and decisions are made by groups on the basis of substantial knowledge and study.

Warner and Abegglen, who base their work on a questionnaire sent to some eight thousand executives, find similar evidence regarding the composition of the executive group, but they fill in the personal side of the picture. They are interested in what the professionalization of management is doing to the men concerned and to their wives. The authors note that the American ideal consists of two related propositions: that every man, if he has sufficient skill and determination and abides by the rules, may aspire to the highest positions, and that though our society has unequal ranks and status there are social and economic ladders open to those who would climb. The existence of a reality behind the dream would clearly be an important factor in the survival of American corporate organization.

They find that the executive group as of 1950 was composed of about one half (52 per cent) birth elite, and one half (48 per cent) mobile elite. The former category consists of sons of major owners, of important executives, and of minor executives down to the foreman level. The latter group comprises sons of white-collar workers, farmers, la-

borers, and others. A comparison with the results of earlier studies suggests that mobility is increasing, not decreasing, and that the managerial class is far from hardening.

The contrast between the worlds of the mobile elite and the birth elite is especially helpful in understanding the psychology of modern management. Mobile elite men are par excellence the new professional managers, though some of these may also be found in the other group. The term itself suggests the most prominent characteristic of this group, mobility—geographical, job, firm, social, and personal. As this type of man climbs the ladder, he has a succession of jobs, locations, social relations, and even wives. He has to develop ever-new standards of living and ways of life. These men have as their outstanding characteristics a tremendous drive and a heavy concentration of interest in their own careers. Failure to progress becomes a catastrophe; to prevent this, many other interests are often sacrificed. Frequently the psychological and physical strains of such a pattern of life are severe. In contrast, the birth elite, already having wealth in varying degrees, considerable social status, and either high business position or the prospect of this, behaves quite differently, the difference partly depending on the number of generations the family has been in this group. These persons commonly show much greater interest in civic, social, and intellectual activities than their mobile counterparts. They are much more likely to accumulate outside responsibilities. On the other hand, since the process of selection is not so much dominated by factors of natural ability, some of these men encounter severe pressure in attempting to uphold the family reputation for leadership under difficult conditions. Since in many cases the leaders have lost contact with the lower strata from which the family once came, failure is also a tragedy. Because of their outside interests, such men may try to avoid so far as possible the movement from job to job and place to place which is common among the mobile men. They are likely to be much more conscious of their debt to the past than are the self-made men, they tend to be conservative in philosophy, though often liberal in personal action; whereas the newer type of elite is often more rational and progressive in thought, but also less liberal in its daily activities. These two groups are here sharply delineated, though of course in reality there are many variations.

Diamond's study, though based on only six figures—Girard, Astor, Vanderbilt, Morgan, Rockefeller, and Ford—gives us a guide to the changing elements of that most intangible of all intangibles—public esteem. Determination of the trends in this respect is important, since it seems unlikely that business leaders at any age have wanted to go

down in history as robber barons, monopolists, exploiters, thieves, or even unfair competitors. Therefore any group of leaders is conditioned by what are, or by what it conceives to be, the standards by which the public measures achievement. Obviously, hurriedly written obituaries and editorials are not the best sources of biographical material, but the manner of the measurement illuminates the standards of the measurers.

Diamond finds one important difference between the measures used in the nineteenth century and those used in the twentieth. In the former period economic success by itself was generally regarded as a proof of excellence, and primary attention was focused on the man's personal activities. In particular, much was made of the man's charities and of the distribution of the estate at death. Little was said about his contribution, or the lack of it, to national well-being. With the decline of individualism, however, a change emerges. Personal merit is much less stressed, and social performance is emphasized. The man is evaluated much more as a captain of industry, in which position he achieved much and his achievements as such are evaluated. Even the economic system itself is discussed; and, with the further diminution of the number of great estates under the influence of taxation, in the future still more emphasis seems likely to be placed on career achievements. The mobile man in modern industry can hardly hope to secure lasting fame through a vast accumulation of wealth and spectacular charity.

The three works together leave one with a feeling of optimism, colored only by minor doubts, regarding the future. In American business, and especially in the nationally known companies, the ladder of advancement is clearly more open than at any previous time. Presumably the process of natural selection is also working better than ever before, though evidently not with perfection. One would therefore expect the top leadership of American business to be increasingly intelligent, well educated, aggressive, and tough. It is to be doubted if any other group in society can command the same flow of ability. The importance of this documented conclusion can hardly be overestimated. Studies of backward areas and decaying industries have frequently suggested that inherited, conservative management—the leadership of the third- and fourth-generation birth elite—has been a major source of difficulty. It may be significant that such decay often becomes very noticeable in areas having this type of leadership. The rise of mobile men to power also means that the management group has that national vision—considered geographically, socially, and politically—which is essential for rational direction at the national level. The changing pat-

terns of public evaluation also are running more in terms of success in building a profitable, useful, and enduring institution than in terms of accumulating speculative personal fortunes. This fact should lead toward the development of more responsible, socially conscious management.

Most important of all, these studies suggest strongly that the changes in the nature of top management in recent decades support the evident rise in the prestige of big business in the last few years. On the other hand there is the discordant note that these advantages are being secured to some degree at the expense of the personal dreams and ideals of many of the executives. The tactics of the career-minded executive, both in the office and at home, do not always make pretty reading. A nation of climbers seems to be emerging. On the whole, however, the three works taken together indicate the existence of many healthy trends in American business administration.

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What Makes an Executive? Edited by E. Ginsberg. New York: Columbia University Press, 1955. 179 pp. $3.50.

Management of Expanding Enterprises. By William H. Newman and James P. Logan. New York: Columbia University Press, 1955. 125 pp. $2.75.

At the invitation of the Graduate School of Business of Columbia University, two groups of outstanding leaders in business and public affairs participated in a series of round-table discussions, one on management and another on executives in expanding enterprises. These discussions provided opportunities for exchanging ideas and viewpoints, drawing tentative conclusions, and identifying areas for further research.

Although the participants differed widely on many subjects, they did agree that an executive must have emotional stamina, a strong, continuing ambition, and a willingness to take risks, to switch jobs, to make personal sacrifices, and to move from place to place.

Other conclusions concerning the selection and development of executives were the following:

1. Young men without a college education have just about as much potential as those who complete college.

2. A college degree helps in getting a job on the management ladder, but it does not assure promotion.

3. Many graduates of small colleges and many nonspecialists have made significant contributions as executives.

4. Existing tests are of some use but are severely deficient in revealing the individual's motivation to perform.

5. Companies need to improve techniques for measuring the performance of executives and other employees and for letting them know how they are doing.

6. Some companies put undue emphasis on promotion and not enough on improvement in present position.

7. Delegation and taking risks on people so that they can learn through mistakes are important in developing executives.

8. Care must be exercised in selecting men to attend advanced management courses and in handling them upon their return; otherwise they will be considered the "chosen few."

9. One of the most important contributors to the training of a future executive is his immediate boss, particularly his first boss.

The round-table participants agreed that there is urgent need for extensive and intensive research into the fields of selection and development of executives. The literature on the subject is weak and the practice is not much better. There has been too much dependence on exchanges of experience without sufficient objective observation, experimentation, and analysis. The group concluded that business and the university have much to gain by cooperating in research on more effective methods of early identification of management potential, day-by-day handling of potential executives, use of nonspecialists, development of standards for executives, measurement of performance, and discussion of evaluation with individuals. The members stressed the studying of effects on management development of such intangibles as "attitudes of top management," "the company's philosophy," "the underlying atmosphere." There is also a need for additional knowledge on how to reward superior performance and how to deal with failure. The group suggested that further studies be made of retirement policies and their relation to executive performance and improvement. Another suggested subject was a study of the extent to which executive work in business is substantially the same as executive work in government or the armed forces.

The improvement of management lies in substituting for subjective

and rule-of-thumb practices, proven results and methods developed through systematic research concerning (1) what executives do and what motivates them; (2) why some executives succeed and others fail; (3) how to delegate effectively; (4) how the benefits of a management team can be obtained without weakening the spur of individual responsibility; (5) how to decentralize effectively; (6) what effect size has on management methods, (7) how to time management transitions.

These reports point out that any management—public or private, large or small—needs to answer periodically for each executive, supervisor, and employee: "What is expected of me? How am I doing? How can I improve? Why is it important to improve?"

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The Balance between Centralization and Decentralization in Managerial Control. Edited by H. J. Kruisinga. Leiden, Netherlands: H. E. Stenfert Kroese N. V., 1954. 118 pp. 9 guilders (approx. $2.38).

This symposium stems from an international study conference on the occasion of the fortieth anniversary of the Netherlands School of Economics at Rotterdam, and the title accurately reflects the general nature of the papers and discussions presented. It is refreshing to read an analysis of centralization-decentralization which considers the problem not as one of "either-or" but, rather, as Professor H. J. van der Schroeff of Amsterdam puts it, a matter of a "balance between decentralization of authority and responsibility on the one hand and centralization of control on the other. That's the vital problem!"

This discussion of the centralization-decentralization problem, placed in an international setting and involving both business and government, is perhaps the most sophisticated general one now available. The eleven contributors to the symposium, varying in background from J. R. Simpson, director of organization and methods of the British Treasury, to Ernest Dale of Cornell University, W. Vonk, a Unilever executive, and J. van Vucht Tijssen, director of the Netherlands Foundation for Personnel Management, represent an unusually wide range of experience, which is thoroughly reflected in their papers.

In general, the contributors have considered centralization-decentralization from the standpoints of (1) the structure of the organization and the formal allocation of authority and responsibility, (2) the effects

of various formal and informal managerial controls, (3) the types of personnel required under varying centralization-decentralization patterns, and (4) the human relations factors involved in operating within various frameworks of control and cooperation. To be sure, as with most symposia, the discussions do not present a fully systematic analysis, but the quality of the individual presentations is excellent. There is relatively little duplication, and what there is serves to point up the underlying similarity of fundamental managerial problems in both business and government.

More precisely, the special contributions of this study—compared to other general studies of the subject (which, incidentally, can be counted on the fingers of one hand)—lie in (1) a concern—seldom reflected in the literature now available—with the very real and difficult definitional problems involved, (2) useful classifications and analyses of most of the currently recognized approaches to decentralization, (3) a recognition of the importance of the personnel and human relations aspects in relation to the more impersonal organizational, procedural, and control aspects, (4) the truly international experience and points of view brought to bear on the matter, and (5) the constant emphasis on centralization-decentralization as a problem in managerial equilibrium and balance.

The symposium especially invites comparison with the recent Columbia University round-table report on the *Management of Expanding Enterprises* as summarized by William H. Newman and James P. Logan. While the Netherlands publication has resulted in a more thorough, detailed, and comparative discussion of centralization-decentralization than its American counterpart, the former would have been improved by the addition of an appendix similar to that which appears in the American volume and which outlines "areas needing research." Centralization-decentralization is a crucial problem for the modern world, and research and analysis have just begun to bore into the heart of the matter.

Here are a few aspects of the centralization-decentralization problem which the Netherlands conferees either did not consider or considered only cursorily and which, from the standpoint of this reviewer, especially deserve further inquiry: (1) the effects of particular industrial and governmental centralization-decentralization patterns and policies upon the social and political ideals and structures of nations and societies; (2) the frequent necessity to readjust centralization-decentralization balances over time, as suggested by the administrative proverb, "Sometimes it is necessary first to centralize in order later to decentralize";

(3) the relationship of the development of staff agencies within an organization—including consideration of such matters as the effects of a scarcity of qualified technicians, the lack of which is now forcing the centralization of operations research activities in top-level staffs—to over-all centralization-decentralization planning; (4) the effects of various centralization-decentralization patterns and policies upon the ultimate consumer as well as the implications of centralization-decentralization pressures from consumers—or, in the case of government, from private citizens; and (5) the full range of costs—and here I refer to a broader cost concept than that of simple industrial "profitability"—of various centralization-decentralization balances.

In conclusion, it should be noted that the Netherlands symposium is well organized, well written, and relatively free from the rehashing type of double-talk which accounts for much of the sterility of management literature today. The papers also provide practical examples in illustration of theoretical considerations.

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The Dynamics of Bureaucracy: A Study of Interpersonal Relations in Two Government Agencies. By Peter M. Blau. Chicago: The University of Chicago Press, 1955. 269 pp. $5.00.

The myths and folklore surrounding the notion of "bureaucracy" (especially in government) are legion; the number of careful, systematic studies of operating bureaucracies are still, unfortunately, very few. Professor Blau's study goes a long way toward remedying this situation. As one of a growing number of academic sociologists not content with conducting research in their so-called ivory towers, he spent over a year in the field in a firsthand investigation of the day-to-day operations of two departments, one in a state and one in a federal agency. His focus is on the "operating" officials—the people at the lower echelons who conduct the everyday business of their agencies—rather than on the high-level policy makers. His method is chiefly systematic observation, supplemented by interviewing and the careful use of a variety of documentary sources. His theoretical framework is that of functional analysis, a mode of inquiry which is enjoying increasing use among many sociologists and cultural anthropologists. Professor Blau's use of functional analysis is very astute and may be studied

profitably by those who are interested in the advantages and shortcomings of this particular approach.

The book is written very tightly; the reader is not forced to skirt around lengthy "asides" and peripheral excursions. It makes interesting reading because it is liberally sprinkled with direct quotations and verbatim reports of events as they took place. In less than fifteen pages of the opening chapter, Professor Blau lays out his study, discusses the limitations as well as the advantages of his "case-study" approach, and presents a critical review of the theoretical scheme which he used to collect and analyze his data. The remainder of the book is divided into three parts. The first deals with a department in a state employment agency. The focus here is on the effects of new records of performance on interpersonal competition among the employees, and the effects of these records on productivity. Emphasis is also placed on the relationship of these civil servants to their clients, especially in the case of bureaucratic norms of impartiality.

In Part II, a department in a federal law enforcement agency is discussed and analyzed. Again the major focus is on the interpersonal relationships of the officials and their superiors and the effect of these relationships on productivity. The substantive problems, however, are different in degree and in kind. Here the emphasis is on patterns of cooperation among the officials to relieve some of the anxiety of having to work with regulations undergoing continual change, especially those affected by court decisions.

Part III discusses some of the implications of the author's empirical studies, particularly for the problem of change in a bureaucratic organization. Contrary to the widely held notion that bureaucracy breeds rigidity and resistance to change, Blau cites his findings to support the opposite conclusion. As the title of the work implies, the basic thesis is that bureaucracy is a dynamic structure and that the informal organization, far from being a mere deviation from the immutable formal structure, must, in fact, be viewed as one of the most important sources of permanent change within the organization. With respect to the dynamic character of bureaucratic organization, it should be pointed out (as the author does) that he has been concerned with a special type of bureaucracy, namely the government civil service. One of the prime requirements for a favorable attitude toward change cited in this study is a basic security in the job. To the extent that such security does not yet exist in industrial bureaucracies, we are much more likely to expect a "don't rock the boat" type of attitude toward change.

Dr. Blau does not pretend that his findings are representative of

American bureaucracies in general or even of governmental agencies. Is this book then merely of academic interest for the reader who does not happen to be interested in a state employment agency or in a federal law enforcement agency? In the opinion of this reviewer, Blau's study still has much to recommend it. This is primarily because of the sophisticated application of theory and method to the study as a whole, the use of two agencies to provide an immediate check and comparison, and the constant concern with the relationship of these departments to the larger organization of which they are a part. These factors not only facilitate the replication of this study in other specific organizations, but they enable the reader to locate his own organization and problems and to draw tentative implications which can then be subjected to further checks.

NORMAN KAPLAN

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Great Enterprise: Growth and Behavior of the Big Corporation. By Herrymon Maurer. New York: The Macmillan Company, 1955. 296 pp. $5.00.

Mr. Maurer seeks in this book to meet a need for a general perspective on the large modern corporation. He attempts to gain and to record this perspective through research into the historical facts of United States business and the daily behavior of fifty large companies, selected for pre-eminence in their various fields. Much of the material presented has appeared earlier in *Fortune*. Briefly stated, the author's conclusions or theories about current and future corporate activity are as follows:

1. The large corporations are social organizations, far removed in type from the business form envisioned by the classical economists or by those who first organized them.

2. Large corporations must be justified on the basis of their contribution to the society. (He suggests and attempts to show how and why they deserve such justification.)

3. The modern manager is and will be a generalist, a professional, and will be hired to direct the corporation's activities. He will not be a "tycoon" of the Rockefeller, Morgan, or Carnegie type, nor will he "own" his own company.

4. Management decisions will be those of a group, committee, or

other similar arrangement, no matter what the formal organization chart or manual may indicate.

5. Decentralization is one of the most important factors in the growth and development of the large corporation.

6. A rationale by which the large corporation can understand and explain itself is needed if the corporation is to survive.

The historical research and the research into the activities of the fifty companies have provided an interesting group of facts and figures. There are many brief references to prominent men, ranging from Adam Smith to Wendell Willkie to Harlow Curtice, although it is often rather difficult for the reader to relate the anecdotes concerning these men to the discussion at hand. Nevertheless there is a wealth of ideas, statistical data, and examples which can be used by anyone who is interested in almost any phase of the administration or the theory of administration of the large corporation.

There is room to question some of the information given to the author and therefore room to wonder about the validity of some conclusions. For example, it would seem difficult to believe that the heads of the automobile divisions of General Motors have as complete freedom as is described and are as fiercely competitive in style as is stated, in view of the comparative sameness of the basic style of their cars.

The aim of the book is a good one, for undoubtedly the large corporation is here to stay; this book, however, is not the rationale which the corporation needs. That rationale remains to be written.

ROBERT E. BAIRD

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Money and Motivation: An Analysis of Incentives in Industry. By William Foote Whyte and others. New York: Harper and Brothers, 1955. 268 pp. $3.50.

The author states that his task is "to build a new model, socio-economic man, to replace the discredited economic man who has held sway in the incentive systems most common in industry today." Although no one really believes the economic-man theory of motivation, the significant social and psychological factors in industrial organization are pushed to the background in setting up incentive systems

because they "cancel each other out" or "cannot be measured anyway." It is the author's contention, however, that incentive systems can be understood and analyzed only with respect to these social and psychological factors. Consequently, an attempt is made "to develop a theory which will tie together the economic incentive and the human relations pattern existing in the plant."

A considerable amount of case material is presented, including data on individual and group incentive schemes and on plant organization. The incentive worker is examined in relation to his own work group and to management (Part I), and the work group is analyzed in its instrumental and social relationships with other groups in the plant (Part II). These two sections are primarily focused on an analysis of individual piece-rate systems, while Part III is devoted to a consideration of the plant as a whole and to some plant-wide incentive systems, particularly the Scanlon Plan. Finally, generalizations drawn from the case studies are pulled together in the last section (Part IV), where a framework for studying economic incentives and human relations is formulated.

The author draws heavily on previous publications of his collaborators (Melville Dalton, Donald Roy, Leonard Sayles, Orvis Collins, Frank Miller, George Strauss, Friedrich Fuerstenberg, and Alex Bavelas) as well as his own, although some new materials are also presented. The frame of reference used is essentially that employed in the author's *Pattern for Industrial Peace* (New York: Harper and Brothers, 1951). In his new book, however, the emphasis is placed explicitly on an examination of the relations between incentive systems and the symbols, sentiments (including norms, or types of behavior required by the group), activities, and interactions which obtain within the social system of the plant. It is made clear that incentive systems, with their attendant time-and-motion studies and cost analyses, must be evaluated within the context of the social system in which they are established. Cases are discussed in which failure on the part of both union and management to consider some of the social and psychological factors involved led to disequilibrium in production processes and to conflicts between work groups and between union and management. It is suggested that the individual incentive system, often a symbol of conflict with management, creates situations in which it is difficult for management and union leadership to control or adjust inequities that may arise. In the last analysis, any motivational scheme depends upon the willingness of workers and the union to cooperate with management. But cooperation can arise and continue only to the extent that frequent

and satisfying communications take place both up and down the line in union and company and between them at all levels in the organization. Union-management-administered suggestion plans and plant-wide incentive schemes, in which incentives, productivity, and workers' suggestions are components of the same interactional system, are considered conducive to establishing and maintaining mutual cooperation. Such procedures, however, require a working structure in which union, management, and workers are given opportunities and clearly understood modes for initiating action. This would be feasible in any particular situation, provided attitudes and methods of approach to organizational problems customarily held by labor and management are revised. A method for coping with this apparently endemic conflict is offered by the author in the last section of the book.

The frame of reference and concepts employed relate components of social action in industrial organizations with social and economic aspects of the worker's motivational system. The analysis represents another step away from preoccupation with morale, satisfactions, and fringe benefits as such, toward an analysis of the salient elements of the social and cultural matrix within which intraplant interactions take place. A systematic theory is not presented—at least not in the sense of rigorously defined and interrelated concepts and propositions. But the conceptual tools employed in the analysis of the case material do contribute to a fuller understanding of workers' responses to incentive systems and of the place of incentive systems in the total organization of work. A sociological treatment of motivational devices used in industry has been needed for some time. For this reason the book will be helpful to those interested in the sociology of organizations. It is a useful adjunct to current writings in the sociology of industry. While not providing any simple rules for management to follow, the social interaction approach to organizational problems would also seem to have some utility for both administrators and labor leaders.

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Abstracts

ABSTRACTS are provided for periodical articles, publications of less than book length, government documents, and other fugitive-type materials. Accounts are intended to be descriptive rather than analytical.

The same general criteria, interpreted somewhat more broadly, are applied in the selection of material here as for inclusion of articles and in the selection of books for review, although more emphasis will be accorded to lesser known sources in order to focus attention upon more elusive materials on the subject of administration.

Academic Administration: Its Abuses and Uses. Logan Wilson. *American Association of University Professors Bulletin,* 41 (Winter 1955), 684–692. Available from 20th and Northampton Streets, Easton, Pennsylvania. Subscription, $3.00 annually.

This article is a discussion of the problems of internal administration in colleges and universities. The author lists abuses prevalent today, stressing the inappropriate criteria applied in the choice of administrators, the misconceptions of what is to be done in a university, and, above all, the structural gaps and inadequacies which lead to the separation of the faculty and the administrative body. The "uses" of collegiate administration are also discussed. According to the author, the administration should strive to maintain and increase the strength of the faculty, to allocate resources equitably, and to keep a proper balance in the over-all educational program. This article is drawn from an address given by Logan Wilson, President of the University of Texas, to the Chapter of the American Association of University Professors at the Agricultural and Mechanical College of Texas.

Administration Organization in Capital Budgeting. Frank E. Norton. *The Journal of Business,* 28 (October 1955), 291–295. Available from The University of Chicago Press, 5750 Ellis Avenue, Chicago 37, Illinois. Single copy, $1.75.

The author, a faculty member of the School of Business Administration, University of California, Los Angeles, surveys the available literature concerning administrative organization and procedures in connection with capital budgeting. He describes some of the current practices used in the initiation, screening, and approval of capital-expenditure proposals. Mr. Norton's study reveals that continuous, systematic study and the formulation of budgets are found far less frequently in the sphere of capital expenditures than in the sphere of current operations. He concludes that no hypotheses concerning effective administrative structure can be formulated until a more thorough knowledge of prevailing practices is secured.

Capital Expenditure Management. Horace G. Hill, Jr. *The Journal of Business,* 28 (October 1955), 285–290. Available from The University of Chicago Press, 5750 Ellis Avenue, Chicago 37, Illinois. Single copy, $1.75.

Mr. Hill, senior associate, Joel Dean Associates, states that his paper is an effort to indicate the administrative problems involved in capital budgeting and to present possible solutions. He traces an investment proposal from its inception to its final disposition in an ideal situation where all members of the management team are motivated by a desire to protect the owners' investment.

Current Studies of the Decision Process: Automation versus Creativity. Harold D. Lasswell. *The Western Political Quarterly,* 8 (September 1955), 381–399. Available from F. B. Schick, University of Utah, Salt Lake City 12, Utah. Single copy, $2.50.

The author discusses the theory and practice of decision-making and execution, calls attention to many lines of approach current among behavior scientists, and raises issues of particular concern to the professional student of government. He begins by outlining a set of categories that are consonant with the modern study of decisions by political scientists and jurists, and then he discusses the more technical questions of method. The author is professor of law and political science at Yale University.

The Definition and Measurement of Ambiences. Theodore Caplow. *Social Forces,* 34 (October 1955), 28–33. Available from the Williams and Wilkins Co., Baltimore, Maryland. Single copy, $1.50.

The author attempts to order empirical data on neighborhood relationships, using a three-concept typology of human collectivities (organizations, groups, and aggregates). He notes the inapplicability of the typology to the system of relations intermediate between the interacting group and the unrelated aggregate, a system where the members may have no mutual relations except through a particular subject. The author suggests the concept "ambience" for this system of relations—meaning a collectivity of all persons interacting with a designated object, for example, the circle of acquaintances, a subject's milieu. An attempt is made to specify the dimensions of ambience (size, density, articulation, elasticity, duration, and homogeneity) and possible types (residential, work, and voluntary). Several implications of this thinking are developed, for example regarding work ambience, which for the new employee can be viewed as a sharply rising curve, representing increase in size. Sharp setbacks in this rising curve appear significantly related to termination of employment, suggesting the use of ambience measurement in predicting occupational crises and in developing ways to reduce labor turnover.

The Executive and His Personnel Officer. Ross Pollock. *Personnel Administration,* September 1955, pp. 24–30. Available from the Society for Personnel Administration, Prince and Lemon Streets, Lancaster Pennsylvania. Single copy, $1.00.

In answer to the complaints against personnel administration by such bodies as the Hoover Commission, the author, chief of the Career Development Program of the United States Civil Service Commission, presents the case for the development of personnel officers in both the federal service and in industry. While admitting that improvements in the present system are necessary, he states that, as an organization grows, the personnel manager performs three vital functions: he helps line managers at all levels to make the most productive use of their employees, he facilitates communication between top executives and employees on personnel policies and procedures, and, finally, he relieves the top executive of the necessity of taking personal action on many personnel matters.

A Factorial Study of Administrative Behavior. Ralph M. Stogdill, Carroll L. Shartle, Robert L. Wherry, and William E. Jaynes. *Personnel*

Psychology, 8 (Summer 1955), 165–180. Available from Personnel Psychology, Inc., Business Office, Mount Royal and Guilford Avenues, Baltimore 2, Maryland. Single copy, $2.00.

For the purpose of this study 420 Navy officers who held various positions in 47 different organizations were divided into 120 groups. Each group was composed of all officers having the same specialty in the same kind of organization. The purpose of the study was to find out if persons occupying similar administrative and executive positions exhibit similar patterns of behavior regardless of the type of organization. Among the measures used were rank, sociometric score, self-concept, amount of time spent in various activities, and per cent of time spent in major responsibilities. The authors explain the method of factor analysis used in their computations.

Eight factors emerged: public relations representatives, professional consultants, technical supervisors, schedule-procedure makers, maintenance administrators, directors or decision makers, and coordinators. Each of these groups is described. The authors conclude that "it would appear feasible to match persistent personal patterns of administrative behavior with the performance patterns required by the job."

Financial Control and Administrative Decentralization. T. E. Chester. *The Manager,* 23 (October 1955), 788–794. Available from Management Publications, Ltd., P.O. Box 483, Management House, 8 Hill Street, London W. 1., England. Single copy, 3 shillings.

This article, based on an address given to the annual general conference of the Association of Hospital Management Committees in June 1955, first reviews administrative decentralization in its relationship to the financing of the hospital service in Great Britain; second, it examines whether, and to what extent, conditions for successful decentralization have been created in its present organization. The author, professor of social administration at Manchester University, sums up with suggestions to remedy existing shortcomings in the hospital service.

The Impact of Certain Communication Nets upon Organization and Performance in Task-Oriented Groups. Harold Guetzkow and Herbert A. Simon. *Management Science,* 1 (April-July 1955). Available from Alan O. Mann, SKF Industries, Inc., Box 6731, Philadelphia 32, Pennsylvania. Single copy, $2.50.

A series of laboratory experiments were conducted in which groups of five persons attacked a problem in successive trials. This was basically a replication of Leavitt's studies of communication nets of 1951, but with a separation of the effect of the communication pattern on the task performance from the effect of the pattern upon the development of an organization structure.

A two- or three-level hierarchy was possible under each of the communication nets, and when the groups had organized themselves into a hierarchy they performed the task efficiently. The difficulty of achieving a hierarchical organization, however, varied with the different communication restrictions.

These findings impose serious qualifications upon the assertions of current management literature which leave one with the expectation that a reduction in communication restrictions necessarily will lead to a more adequately functioning organization.

Interaction and Sentiment in the Foreman-Worker Relationship. Arthur N. Turner. *Human Organization,* 14 (Spring 1955), 10–16. Available from The Society for Applied Anthropology, 150 East 35th Street, New York 16, New York. Subscription, $8.00 annually.

This report represents part of a larger study of human adjustment to mass production technology, with particular regard to the relations of two variables, interaction and sentiment. Through semidirected interviews, the author collected data on the frequency of workmen talking to foremen and the quality of the foremen's relations with their men. In examining samples from two different automobile assembly plants, a significant relation between interaction frequency and sentiment toward foremen is indicated. Cases not supporting the generalization are examined to discover the basis for the discrepancy.

The Leader Behavior and Leadership Ideology of Educational Administrators and Aircraft Commanders. Andrew W. Halpin. *Harvard Educational Review,* 25 (Winter 1955), 18–32. Available from the Editorial Board, Lawrence Hall, Kirkland Street, Cambridge, Massachusetts. Single copy, $1.00.

Through a study of the two dimensions of leader behavior, "initiating structure" and "consideration," in two different institutional settings, Mr. Halpin shows that educational administrators and aircraft commanders differ in both their leadership ideology and their leadership style. He suggests that these differences may be associated

with differences between the settings within which the two groups operate, and, at the same time, he stresses the necessity for developing objective criteria of "effectiveness" for different institutional settings, in order to avoid "role conflict." Mr. Halpin is a research associate in psychology on the Personnel Research Board of Ohio State University and also serves as a consultant to the School-Community Development Study.

Management Succession. Rosemary Stewart. *The Manager,* 23 (August 1955), 579–582; 23 (September 1955), 676–679. Available from Management Publications, Ltd., P.O. Box 483, Management House, 8 Hill Street, London W. 1., England. Single copy, 3 shillings.

Miss Stewart, in these two articles, describes the results of a research project conducted by the Acton Society Trust on promotion policies and practices above the level of foreman in fifty large manufacturing companies in Britain. The first article summarizes the problems facing these firms, as regards management succession and development, which arose because of the growth of large-scale organizations and because of the increasing complexity of industry. The major problems seem to concern the educational background of the future managers, their technical training, and their selection either from within the company or from outside. In the second article, Miss Stewart shows how these fifty companies have tackled the problems in varying ways. The author states that the educational standard of managers has risen, especially since World War II, although many firms are still unaware of the need for management programs. She states that British companies tend to be distrustful of a formal organization. Many of them promote from within and make little attempt to raise the general standard for managers.

Matthew Boulton, F. R. S., 1728–1809. P. W. Kingsford. *The Manager,* 23 (October 1955), 783–787. Available from Management Publications, Ltd., P.O. Box 483, Management House, 8 Hill Street, London W. 1., England. Single copy, 3 shillings.

This article describes how Matthew Boulton, during the years of the Industrial Revolution in England, faced the problems of change from an old, established, small-scale firm to a large-scale factory, how he introduced a new source of power to the country through the standardized production of steam engines, and, finally, how the organization of his Soho factory in Birmingham was one of the earliest examples of modern

management. This article forms the first of a series on "Pioneers of Modern Management." Mr. Kingsford is head of commerce in the social and professional studies department of Hatfield Technical College in England.

The Maturing of Managers. Michael J. Blansfield. *Personnel Administration,* September 1955, pp. 38–47. Available from the Society for Personnel Administration, Prince and Lemon Streets, Lancaster, Pennsylvania. Single copy, $1.00.

Mr. Blansfield, supervisory training officer at Norton Air Force Base, describes the program adopted there in an attempt to meet a problem of managerial immaturity. The basic program, planned in four twenty-four-hour courses, included group discussion on conference methods and techniques, the case study method, group role-playing, and "leadership attitudes and behavior." The aim of the program was to induce insight among the supervisors in such a way that these eighty-five men would come to see themselves with some degree of objectivity and become more mature in judgment. As a result of the program, the author claims that there was evidence of some growth in managerial maturity in perhaps one third of the total group, while it also gave important indications of other problems to be dealt with in the field of management development.

Philosophers, Principles and Naval Organization. John D. Hayes. *Armed Forces Management,* 2 (November 1955), 17–21, and 2 (December 1955), 13–15. Single copy, 35 cents.

In the first of these two articles, the author describes certain principles of military organization, administration, and management. In the second article, the organization of the United States Navy and its task-type system is described as an illustration of the principle of dualism—the formal separation of the functions of purpose from those of support. Admiral Hayes concludes that the military profession in the United States is faced today with the problem of managing large enterprises and that in the field of logistics creative thinking is especially necessary.

Ratios of Staff and Line Employees and Stages of Differentiation of Staff Functions: A Study of Ohio Manufacturing Companies (Research Monograph No. 72). Alton W. Baker and Ralph C. Davis. Columbus, Ohio, 1954. 62 pp. Available from Bureau of Business

Research, College of Commerce and Administration, Ohio State University, Columbus, Ohio. No price given.

This is a detailed study of 211 manufacturing firms in fourteen industries. Its purpose is to serve as a preliminary investigation of the functional characteristics of manufacturing companies which are associated with the structure of organization at various stages of development. The companies considered, varying in size from twenty-five to 3,999 employees, are divided into eight groups according to size; direct workers are defined as those working on the physical product; indirect workers, including all others, are classified into sixteen functional groups, including executives and supervisory staff. Among the conclusions drawn: executives and supervisory staff increase at a constant rate with increases in the direct labor force, and as the number of direct workers increases, top executive staff increases at a diminishing rate.

Reactions to Administrative Change: A Study of Staff Relations in Three British Hospitals. Cyril Sofer. *Human Relations*, 8 (1955), 291–316. Available from Human Relations, The Research Center for Group Dynamics, University of Michigan, Ann Arbor, Michigan. Single copy, $1.75.

Dr. Sofer reports on a field study conducted within three British hospitals five years after the nationalization of hospital service. His research is concerned with the staff and organizational reactions to administrative change and to an increase in size. The author, who is presently on the staff of the Tavistock Institute of Human Relations, conducted the foregoing study when, as a member of the staff of the Acton Society Trust, he was working on its researches into hospital administration.

Selection of Executives. B. Ungerson. *The Manager*, 23 (September 1955), 682–687. Available from Management Publications, Ltd., P. O. Box 483, Management House, 8 Hill Street, London W. 1., England. Single copy, 3 shillings.

In this paper read to the fourth Scottish Conference of the British Institute of Management and the Institute of Industrial Administration in May 1955, Mr. Ungerson, director of the Anne Shaw Organization, Ltd., emphasizes the need for improving methods of selection of executives which are used generally in Great Britain in commerce and industry. Quoting largely from results and experience gained in the selection procedures in the British Army, the author stresses that the

criteria of reliability and validity should be applied to all selection procedures. Improvements could also be made by careful preliminary analyses of jobs, thus clarifying requirements; interviewing methods could be bettered; and intelligence and other tests could be used. Mr. Ungerson sums up with a description of the "group selection techniques" used by such bodies as the Civil Service Selection Board.

Size, Shape, and Function in Industrial Organizations. Mason Haire. *Human Organization,* 14 (Spring 1955), 17–22. Available from The Society for Applied Anthropology, 150 East 35th Street, New York 16, New York. Subscription, $8.00 annually.

Haire considers briefly the meaning and significance of the concepts "size," "shape," and "function" in biological theory and attempts to extrapolate some of this knowledge to the field of industrial organization and to develop its implications. For example, size is examined in relation to the history of small restaurants in this country as the author relates increasing size to increasing problems of management and the frequent demise of such organizations. Similarly, shape and function are examined in relation to industrial organization, and suggestions are made regarding other possible avenues of thought. Finally, these concepts are considered in relation to current organization research, and recommendations are offered for the use of these concepts in such research.

Some Aspects of the Executive Personality. John B. Miner and John E. Culver. *Journal of Applied Psychology,* 39 (October 1955), 348–353. Available from the American Psychological Association, 1333 Sixteenth Street, N.W., Washington 6, D.C. Single copy, $1.50.

Mr. Miner and Mr. Culver of Princeton University have investigated the personality traits which are common to notably successful businessmen. The Tompkins-Horn Picture Arrangement Test was used in their study of forty-four top-level executives. Two characteristics of the executive occupation appear to have been isolated. The first is a fear of illness, the second a tendency to have a sense of helplessness in solving complex problems and to be dependent on others for solutions.

Some Fundamental Principles of a General Theory of Management. J. L. Meij. *The Journal of Industrial Economics,* 4 (October 1955), 16–32. Available from Basil Blackwell, Broad Street, Oxford, England. Single copy, 10 shillings.

Mr. J. L. Meij, professor of industrial economics at the State University of Groningen, the Netherlands, tackles the problems of management in growing enterprises. The basic problem is the struggle for adequacy of the scope of control at all levels of management. Organization aims at widening and deepening the span of control in order to counteract both the increasing distance from "top to foot" and the increasing costs of management. The only feasible way to achieve this aim, the author states, is to adopt the line and staff method of organization. Work that can be done according to a previously prepared pattern or directive can be separated from that of the leader. In this way the span of control can be widened effectively, while it can be deepened by reinforcing the preventive element in management through the making of instructions, through standardizing, budgeting, planning, and, to a certain degree, through routing and scheduling.

Some Problems in the Organization and Administration of Public Enterprises in the Industrial Field. United Nations Technical Assistance Administration. New York, 1954. 87 pp. Available from International Documents Service, Columbia University Press, 2960 Broadway, New York 27, New York. (United Nations Publications Sales No.: 1954, II. H. 1.) Single copy, 50 cents.

The papers published in this booklet are revisions of material originally presented at the Seminar on Organization and Administration of Public Enterprises in the Industrial Field, held in Rangoon in March 1954. Subjects discussed are: types of organization suitable for public enterprises; organizational relationships and controls; problems of personnel management; managerial policy and internal relationships; and public understanding. The purpose of the seminar was to stimulate interest in and discussion of the administrative and organizational problems common to the member countries of the United Nations Economic Commission for Asia and the Far East. Hence, the papers presented do not offer specific solutions but rather mark a few trends and suggest areas in which further research and wider experience are needed. An extensive bibliography is included.

Staff and Line. Poul Meyer. *Revue Internationale des Sciences Administratives,* 1955, No. 1, pp. 9–28. Available from the Institut International des Sciences Administratives, "Résidence Belliard," 205 Rue Belliard, Brussels, Belgium. No price given.

The author, assistant professor at the University of Copenhagen, examines the American philosophy of staff and line as a theory of administration originating from the armed forces. He defines the terms, discusses differences of opinion that exist concerning these terms between such men as Leonard White and Albert Lepawsky, and examines the problems to be faced in separating the functions of staff and line agencies. He sums up by emphasizing the necessity for a clear-cut definition of the authority exercised by auxiliary units.

A Survey of Materials for the Study of Military Management. Paul P. Van Riper. *American Political Science Review,* 49 (September 1955), 828–850. Available in Reprint Series No. 2 from the Administrative Secretary, Graduate School of Business and Public Administration, Cornell University, Ithaca, New York. Single copy, no charge.

In this bibliographical survey of source materials, the author first notes the several obstacles which make research difficult in the field of military management. Background materials are suggested for a basic introduction to the field. These are followed by a consideration of basic indexes, the official military historical programs, and materials on organization and management in the major services. Although the bibliography is primarily concerned with the United States military organization, some foreign documents and materials are noted. The author is a faculty member of the Graduate School of Business and Public Administration at Cornell.

The Theoretical Study of Educational Administration. John Walton. *Harvard Educational Review,* 25 (Summer 1955), 169–178. Available from The Editorial Board, *Harvard Educational Review,* Lawrence Hall, Kirkland St., Cambridge 38, Massachusetts. Single copy, $1.00.

Dr. Walton, who is assistant professor of education at the Johns Hopkins University, describes some of the efforts which have been made, but which have failed, in attempts to develop a theory or set of principles of educational administration. He continues with a discussion of some of the theoretical approaches to the study of administration in other kinds of institutions, and concludes by noting three outlines of theories of administration which may be applicable to education.

Top Management Dilemma: Company Needs vs. Individual Development. Chris Argyris. *Personnel,* 32 (September 1955), 123–134. Avail-

able from American Management Association, 330 West 42nd Street, New York 36, New York. Single copy, $1.75.

Mr. Argyris, who is associated with the Yale University School of Engineering, undertook a study of a management group in an attempt to diagnose the personality of the executive. A fundamental conflict between the needs of the organization and the needs of the individual was noted. Executives who are expert at getting a job done do not have the most effective personalities for developing their subordinates. The author offers the following tentative guideposts to effect a solution to the basic conflict: (1) managers need a greater understanding of themselves, and (2) the necessary administrative skills must be explored.

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INFORMATION FOR ADMINISTRATORS: A GUIDE TO PUBLICATIONS AND SERVICES FOR MANAGEMENT IN BUSINESS AND GOVERNMENT. Paul Wasserman. Publication date: August 1956. Probable price: $6.00. May be ordered from the Cornell University Press, 124 Roberts Place, Ithaca, New York.

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Lithoprinted in U.S.A.
EDWARDS BROTHERS, INC.
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